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Agenda Item: B

USSR

ON METHODS FOR ESTIMATING MANPOWER AND ITS COMPOSITION. THE IMPORTANCE OF LABOUR STATISTICS FOR SECURING FULL EMPLOYMENT OF THE POPULATION AVAILABLE FOR WORK AND FOR TRAINING OF PERSONNEL

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The USSR Central Statistical Board

Papers have been contributed to the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas as working papers for that Conference. They are published as presented by the contributors, and the contents and the views expressed are those of the contributors. (See notes overleaf.)

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B. ON METHODS FOR ESTIMATING MANPOWER AND ITS COMPOSITION, THE IMPORTANCE OF LABOUR STATISTICS FOR SECURING FULL EMPLOYMENT OF THE POPULATION AVAILABLE FOR WORK AND FOR TRAINING OF PERSONNEL

by

P.G.Podyachikh

The USSR Central Statistical Board

1. The ultimate productive force of human society is its manpower - workers, farmers, employees, engineering and technical personnel. Economic development of any country depends upon how fully and effectively her manpower is utilized. To be effective every governmental measure in planning or any other regulating of economic and social activities should proceed from regularly available information on the quantity, structure and efficiency of labour force. Another important prerequisite is the working out of adequate measures for an effective distribution of manpower. In many countries, however, the governments fail to pay proper attention to training steadily a sufficient number of highly skilled working force and specialists. Neither do they take enough care of to ensure full employment and better living standards for the population.

Today very few countries can rightly claim to have at their disposal properly organized labour statistics furnishing data on the quantity, structure, employment and territorial distribution of manpower, as well as on its working and living conditions. Information relating to the quantity, structure and distribution of manpower is usually made available once in 10 years by the censuses, though employment figures may vary considerably even from season to season within a single year. In some countries the figures relating to employment, labour turnover, wages and productivity are obtained solely at random inquiries and from reports submitted voluntarily by individual employers. Such figures are not always representative and cannot be relied upon in solving various problems relating to the rational use of labour. The many years of Soviet experience have shown that the estimates of the number and structure of manpower, based on the regular and obligatory reports submitted without exception by all establishments, building sites, offices and organizations and by the findings of censuses and inquiries are capable of yielding much more accurate and comprehensive data.

This report gives a brief survey of the contents, organization of labour statistics in the USSR, and their application. In the coming twenty-year period (1960 - 1980) the Soviet Union is planning to increase its material production about 5 times and labour productivity in certain industries by 4 - 6 times. This plan of the growth of production and productivity can be implemented only if an extremely reliable organization of labour is effected and if the whole of the country's labour force is utilized with maximum efficiency. Labour statistics have a part to play in the attainment of this goal and so its importance will still further.

2. In the USSR labour statistics consists of the following sectors:

a) Statistics relating to the number of the working people, utilization of working time and to labour productivity;

b) Composition of the Labour force;

c) Wages and living standards;

d) Training and improvement of qualifications of the personnel;

e) Balance of labour reserves.

The indices obtained in each of the foregoing sectors of labour statistics are based on the system of indices adopted by the state economic plan for labour. Labour statistics yield scientifically valid data on the fulfilment of monthly, quarterly and annual plans, these data being simultaneously used as a starting point for the elaboration of plans for the future. Hence it follows that labour statistics are used as one of the state's weapons for managing national economy according to plan.

Before 1930 one of the functions of labour statistics was to report on the number and composition of the unemployed and on the measures to be taken for providing them with work. By 1930 unemployment had been abolished due to the planned economy. From that time on no unemployment subdivision is to be found in labour statistics.

3. In the USSR every enterprise, office and organization must submit reports covering employment and wages, either monthly, in manufacturing industries, or quarterly, in non-manufacturing establishments. Besides, annual reports are handed in, indicating average employment for the year and the employment figure at the end of the year. Also reported is the sum total of annual wages.

Collective farms are required to report annually on the available manpower and its utilization.

Every enterprise, office and organization is given a plan, based on the approved plan for output, specifying employment quotas in every personnel category (workers, employees, engineering and technical staff, service personnel, guards, etc.), as well as wages funds and productivity quotas (output per man). The reports made by the industrial organizations and establishments characterize the progress

made in the fulfilment of their plans.

Cited in the reports are the planned and actual employment figures, as well as the planned and actual amount of wages paid during the period under review (month, quarter, year). The said indices are available for all of the personnel, for the personnel engaged in basic work, and for the rest of the personnel. Thus, monthly reports deal separately with the personnel engaged directly in production, and with the non-production staff (accomodation services, utilities, kindergartens, training personnel, transport, capital repairs, etc.). The quarterly reports, apart from indicating the overall number of men employed in production cite separate figures not only for workers, but also for the engineering and technical staff, employees, attendance staff, guards and apprentices.

A quarterly report contains also data on the output per man in terms of value. Besides, on the basis of employment numbers and the total output, estimates are made of the productivity indices for different industries and areas. In a number of industries the employment figures in conjuction with data giving output in terms of natural product enable productivity indices to be expressed in the units of natural product (for instance, in coal and oil production, etc). Since any increase in labour efficiency depends on a better utilization of working time, manufacturing establishments point out in their accounts how effectively the time of manufacturing workers was utilized (how many man days were spent on the job, idle time periods, failures to report on work due to vacations, sick list, etc. were recorded). They are also expected to give data on how many new workers were hired for work and indicate their former occupations, as well as how many workers quit working giving reasons for dismisals. More accurate data concerning the utilization of working time are obtained through selective investigation.

Annual reports differ from the quarterly ones in that they comprise greater details. Thus, the data on the wages fund cover separately every category of the production personnel. The personnel of non-industrial organizations is covered according to a more detailed list of them. Annual reports contain data on the classification of wages (piecework wages according to the kind of work, hourly wages according to the tariff scale, premiums, overtime and idle-time payments, vacation pays, long-service bonuses, etc.).

In compiling statistical reports the administration proceeds from standard methodological principles relating to the procedure of conducting primary registration (time-table data, performance sheets, etc.) and to the procedure for drawing up reports on labour.

Statistical accounts of enterprises and offices are submitted to the local statistical boards to be used by the governmental statistical agencies for drawing up a general report on employment and wages fund in different branches of national economy. Quarterly and annual data are available for all branches of economy, while the industrial branches are

convered also by monthly accounts. The annual data, based on annual reports, are elaborated in greater detailed classification of national economy branches and industries.

General statistical surveys are handed over to economic management bodies (Regional Economic Councils), to planning agencies, to Councils of Ministers in the various Republics and to local authorities. The USSR Central Statistical Board submits the overall statistical surveys for the country as a whole to the USSR Government and governmental planning agencies.

The monthly, quarterly and annual statistics enable people to be constantly informed of the amount of manpower employed today, whether it is effectively utilized by the enterprises and to take timely measures for giving help to enterprises for some or other reason lagging behind their production plans, and for finding work for these people who have been released from their jobs due to various causes.

4. To ascertain the structure of manpower the state statistical agencies are carrying out the following work:

a) Once in every two or three years calculations are made of the structure of manpower, taking into account sex, age and continuous employment record.

The obtained data contribute to a proper distribution of men and women in various industries and occupations, to the working out of manpower training programmes. They also reveal the effect which the fluctuations of manpower have on the number of men with a long employment record in a given establishment.

b) Twice in every five years inquiries are made regarding the workers employed in the key manufacturing industries, their occupations, rates of pay, forms of wage systems.

All occupations in such investigations are classified either as mechanical (attendants at automatic machines, workers using machines and mechanisms or non-mechanical. From a total employment figure for each trade, the numbers of women workers and apprentices are given separately.

Statistical accounts bring to light the scope of labour mechanization, show the effect of mechanization on the professional composition of manpower and the proportion of personnel employed in main and auxiliary departments, as well as in basic and auxiliary jobs. Statistical data thus obtained contribute to the development of training programmes, for workers of different trades and to the improvement of the structure of production organisation. They pave the way for more mechanization and automation, for the elimination of arduous labour and for the transfer of women from relatively hard and low-skilled jobs to those requiring less physical effort and higher skill.

c) For proper planning the training and distribution of enginnering and technical personnel specialists with university and technical-school diplomas in various occupational

categories are registered every year. The following data are collected: the numbers of specialists employed in different occupations for planning; classification of specialists in accordance with sex, nationality and graduation-date categories; the numbers of specialists engaged in various branches of economy, pointing out how many of them are employed in production, science and management; number of specialists employed in various Republics and regions.

Statistical accounts also reveal the number of persons having neither university nor technical-school diplomas and keeping engineering and technical jobs in industrial and building organizations and in state farms.

d) Inquiries are also made annually into the number of persons holding administrative and management posts. This is necessary for the improvement of economic organization and for elimination of non-productive jobs, the economy in manpower being used for the new jobs in production of material value.

e) Following the 1959 reduction of the working day to 7 hours, or even to 4 - 6 hours in occupations where work is carried on underground or in harmful surroundings, monthly statistical accounts were introduced as a temporary measure to check the results of the transfer from longer to shorter hours. In 1961 an investigation was made into the distribution of all workers and employees and their working hours.

f) In the Soviet Union every worker and employee is entitled to paid vacations ranging in length from 2 to 4 weeks. In 1958 statistical data were gathered of the way the length of holiday period of all workers and employees is arranged.

5. Very important are the statistics relating to wages and living standards, for the amount of wages plus other incomes received by workers determine the level of labour productivity.

The statistics of wages and living standards are based on monthly, quarterly and annual reports on the fulfilment of plans of wages fund (see para. and 4), on occasional investigations into the distribution of workers among various wage groups and wage payment categories, on random investigations into family budgets and on the estimates of total incomes received by the population.

The enquires into the distribution of workers in various tariff and wage categories and systems are conducted simultaneously with the enquiries into the occupational composition of man-power. When statistical data are gathered separately for basic and auxiliary departments for each wage category

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Total incomes of the population include wages together with various payments and benefits received from public funds, such as social insurance allowances, pensions, stipends, various gratuities, free school and university education, free medical service, child-care institutions, sanatoriums, rest homes, etc. In the USSR such payments and benefits amount to 27 per cent of a worker's wages.

involved (piece-rate or hourly) the adopted wage system, direct, progressive or bonus piece-rate, ordinary or bonus hourly wage is pointed out.

An account is kept periodically of the distribution of workers by groups according to the amount of wages. The resulting groupings characterize the level of wages received by workers, engineering and technical staff, employees, etc. in basic and auxiliary activities for all types of enterprises and offices in separate branches of national economy and in different areas of the country. Besides, random inquiries are conducted into the amount and structure of wages received by workers in most important occupations. Data of these reports and of enquiries made into the distribution of workers in various tariff categories and wage systems contribute to the rationalization of tariff and wage systems.

Investigations into the amounts and patterns of family incomes and into the pattern of public consumption in the USSR involve systematic budget studies in the families of 23,800 workers, employees, engineering and technical staff, 27,000 collective farmers and 400 pensioners. The investigations extend to the families of workers engaged in all major branches of national economy, the production being represented by the most important of the light and heavy industries. Low- and high-skilled workers enjoy a proportional representation in the inquiries. Budgets of many families are investigated throughout the year, sometimes even for a number of years. In this way budget dynamics in comparable families can be brought to light.

Individual family budget data are summariyed by the CSB statisticians on the basis of everyday records of all incomes and expenses, which are being kept in the families. Short-programme results are available every month. The data of extended and full programmes are obtained quarterly and once in a year, respectively. Besides, the families under investigation are subject to incidental inquiries into their living conditions, employment of adult members, recreation and household accomodations, etc.

The enquiries into family budgets characterize living standards in various social groups and yield data for the calculation of total incomes of population, their real incomes, monetary balance, balance of labour reserves, public consumption funds, supply and demand for important agricultural products, and other important work.

6. A very important factor for the growth of labour efficiency is the level of occupational qualification of the manpower. In the USSR there exists and extensive state-sponsored system of vocational and technical schools, responsible for the training and improvement of manpower. Besides training and improvement courses are available directly within industry.

The schools are attended by juveniles and teen-agers for a period of one to three years. All expenses are covered by appropriations from the state budget. The training and improvement of manpower within industry is carried out in diffe-

rent ways: on the job, in work teams, and through a network of courses. The period of training may vary from one to six months.

The reports submitted to statistical agencies by vocational and technical schools once in three or six months provide information on the number and dynamics of the student body. They also classify students according to sex, age and previous education and point out how many students have received school-leaving certificates and what jobs they have had on leaving the school. An occupational classification of the graduates is also available. Industrial establishments, offices and organizations are obliged once in every six months to submit reports covering their activities in personnel training and improvement. The reports point out how many workers have been enrolled in training programmes during the period under review and how many of them had been or are visiting various educational institutions on a full-time or part-time basis.

7. Among the topics of labour statistics exciting considerable interest are the statistics of industrial accidents and that of appropriations to cover the expenses for all kinds of safety precautions. In the first reports information is given on the number of persons involved in accidents and on the number of man days spent out of work due to disablement. In the following reports data are given on the appropriations allocated for safety programmes from all available financial sources and actual expenditures with sums alotted for safety, ventilation, sanitary and welfare accomodations.

8. In the census years the above types of routine labour statistics are supplemented with detailed census data on the number, structure and distribution of manpower in various industries and territories. It is worth mentioning that the last 1959 census furnished, among other data, rather important and interesting figures relating to the educational standards of persons employed in manual and clerical jobs, both in urban and rural areas. The figures showed a marked improvement in the education of persons enga in manual jobs. This is an evidence of the fact that the difference between manual and intellectual work is being gradually obliterated, analysed against the nationality background the respective figures reveal the growth of workers' and employees' education in various nationalities.

9. The balance of labour reserves is one of the most important aspects of labour statistics. It involves a complex of calculations proceeding from data made available by current and annual accounts, by occasional inquiries and by selective budget investigations. The manpower budget gives a characteristic of the quantity and structure of labour resources, their distribution among various industries and areas and reveals how much labour is available for a further expansion of production.

Manpower budgets of various Republics and administrative areas reveal whether manpower requirements can be met with local resources, whether a certain amount of manpower should be

brought in from other areas, or whether there are adequate resources of labour which can be transferred to other places. The plans for a redistribution of manpower between different Republics are elaborated on the basis of manpower budgets.

The manpower budget figures are composed for January 1 (when work in agriculture and seasonal trades is slack and for July 1 (when the reverse is true, i.e. the work in agriculture and seasonal trades is at its maximum). Also available are manpower budget average figures for the year. Comparisons between data relating to January 1 and July 1 enable one to judge of the scope of seasonal fluctuations in employment of manhood resources and to work out measures for setting up seasonal enterprises.

The manpower budget is drawn up in accordance with the following plan:

	Total	urban districts	rural areas
1. All available labour:			
a) Able-bodied population available for work (men from 16 to 59 and women from 16 to 54 years old, except for disabled of the first and second groups and pensioners).			
b) Older persons continuing to work and employed juveniles (men 60 years old and more and women 55 and more and juveniles under 16).			
2. Distribution of available labour force:			
a) Workers and employees, including those in various industries and trades.			
b) Collective farmers working on the farm:			
c) Individual farmers and handicraftsmen;			
d) Able-bodied students, receiving education on a full-time basis;			
e) Persons engaged in housework and their own auxiliary husbandry			

The data on a budget account serve as a starting point for drawing up a perspective manpower budget. In drawing up perspective manpower budgets for the USSR and for its individual Republics and regions it is necessary to proceed from the contemplated increase in production and labour productivity as well as the perspective number of able-bodied population.

10. The system of labour statistics described in this report has been worked out and perfected during a long period of time. It should be noted especially that a serious demand for such statistics arose as soon as the state had embarked on a planned development of its economy and culture.

In tsarist Russia (before 1917) no labour statistics were in fact available, for the tsarist government had no interest in the problems of manpower employment. In the eyes of Soviet authorities the problems relating to better organization of labour and full employment of able-bodied population are second to none in importance in social and economic spheres. So, work in labour statistics was initiated immediately after the Soviet system was established. At first, this work was carried on within the statistical departments under the People's Commissariat for Labour, the All-Union Trade Union Council and the Supreme Economic Council. Statistical agencies were also set up under the Provincial Departments of Labour. June 15, 1918 saw the publication of the first issue of Labour Statistics Magazine sponsored by the People's Labour Commissariat. For coordinating the activities of those agencies in methodological matters the Council of Labour Statistics was created with membership, representing all the agencies concerned. From the day of its establishment in April 1919 and up to the present moment the Department of Labour Statistics has been a part of the Central Statistical Board. Republican and regional statistical boards also incorporate departments or groups carrying out work in labour statistics. The Labour Statistics Department under the USSR Central Statistical Board is responsible for methodological guidance in work related to labour statistics throughout the USSR, and elaborates standard sheets for primary labour and wages accounts in enterprises. It is engaged in current activities in labour statistics and supervises occasional statistical inquiries.

Individual USSR Republics, particularly Central-Asian Republics, the most oppressed in tsarist Russia, presented great obstacles in the organization of labour statistics. However, presicely these Republics stood in grave need of statistical data to enable social production and the training of national cadres to be improved and developed. Today, statistical work in all USSR Republics is carried on according to a single plan.

The experience in the organization of labour statistics furnishing data used for the planning of economic development of the USSR and its national Republics can undoubtedly be used to advantage by the newly developing countries, particularly by countries eager to introduce full employment of its able-bodied population at the earliest possible date and to create a permanent highly skilled working force and specialists for the purposes of material production and cultural construction.

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ДЛЯ УДОВЛЕТВОРЕНИЯ ПОТРЕБНОСТЕЙ МЕНЕЕ РАЗВИТЫХ РАЙОНОВ

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Agenda Item: B.4

India

THE SIZE OF THE FIRM, EFFICIENCY AND GROWTH : THE RECENT INDIAN EXPERIENCE

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THE SIZE OF THE FIRM, EFFICIENCY AND GROWTH:

THE RECENT INDIAN EXPERIENCE

by

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1. In the developed countries the size distributions of firms in different industries came to be what they are largely due to technological developments and the degree of competition in different industries in successive phases of growth. Governments did not pursue any deliberate, positive policies for fostering the growth of small units until recently.

2. By contrast, in the poor countries now trying to develop, a 'firm-size policy' to protect and foster the growth of small enterprises has been made an integral part of growth policy from the very beginning of the process of planned growth. This policy involves the grant of subsidies for firms of the favoured size groups and/or taxes and restrictions on firms of other sizes.

3. Policies of this kind are based only partly on economic arguments. The main arguments for them are very often sociological. But it is necessary that the strictly economic size-efficiency relationships are clearly analysed.

4. Two main approaches to a study of size-efficiency relationships are: (a) statistical cost analysis and (b) size distribution analysis.

5. In the theory of production the optimum firm is defined as the firm whose short-run average cost curve is tangential to the envelope curve at its lowest point. Therefore, in statistical cost analysis an attempt is made to estimate empirical cost functions from cross-section data and identify the minimum cost scales of output. The results of such analyses conducted so far, and the problems thrown up by them have been discussed in two recent studies.[1]

6. Statistical cost functions for Indian industries cannot be estimated in the present state of the availability of data. Therefore, an attempt is made in this paper to analyse the current size trends in India with the available size distribution data.

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[1] National Bureau of Economic Research, Business Concentration and Price Policy, New York (1955); and J. Johnston, Statistical Cost Analysis, New York (1960).

7. The case for size distribution analysis rests, negatively, on the theoretical and practical difficulties involved in statistical cost analysis and, positively, on the so called 'survival principle', namely, that the plant sizes which remain dominant in fairly competitive industries over considerable periods of time are likely to be optimal or minimum average cost sizes.[2] The variations over time in the relative shares of different plant size classes in the output of different industries can, therefore, provide a good indication of the optimal size ranges in those industries.

8. Size distribution analysis has been applied recently by George Stigler to some American industries.[2] It has also been the chief method used by Professor P.S. Florence in analysing the structure of British and American industries.[3] The recently collected annual Census of Manufactures data now enables us to analyse changes in the size structure of 29 Indian industries as well.

II

9. The first Indian Census furnishing figures by employment size classes was the 1953 Census. The last Census of which figures are available at the time of writing is the 1958 Census. In Table 1 the proportions of value added in 'small', 'medium' and 'large' units in 1953 and 1958 have been computed and compared for all the 29 Census industries. Units with less than 100 workers have been defined as 'small' units, units with 100 or more but less than 1,000 workers as 'medium' units and units with 1,000 or more workers as 'large' units.

10. The percentage distribution of value added is obviously a more important indicator of the relative importance of different classes than the percentage distribution of the number of units. For a large majority of the units in an industry may cluster in the 'small' size classes and yet their share in the total net output of the industry may be very small in comparison with that of the few large units. Our data provides a good illustration of this asymmetry. In 17 out of the 29 industries, half or more of the units were 'small' but in only three of them they turned out half or more of the total output. We shall, therefore, concentrate our attention on the relative share of output rather than the relative proportion of units in the 'small', 'medium' and 'large' sectors of every industry. The Table reveals several important characteristics of the size structure of the Census industries.

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[2] George J. Stigler, "The Economies of Scale", Journal of Law and Economics (October 1958).

[3] P.S. Florence, Post War Investment, Location and Size of Plant, Cambridge (1962).

TABLE 1

PERCENTAGE OF VALUE ADDED IN SMALL, MEDIUM AND LARGE UNITS

Industry	Small Units			Medium Units			Large Units		
	1958	1953	Increase or Decrease	1958	1953	Increase or Decrease	1958	1953	Increase or Decrease
Aluminium, Copper and Brass	12.4	19.8	- 7.4	54.2	56.4	- 2.2	33.4	23.8	+ 9.6
Iron and Steel	1.8	0.9	+ 0.9	5.5	2.8	+ 2.7	92.7	96.3	- 3.6
Bicycles	15.2	7.4	+ 7.8	31.8	46.4	- 14.6	53.0	46.2	+ 6.8
Sewing Machines	5.8	4.0	+ 1.8	3.9	3.9	0.0	90.3	92.1	- 1.8
Biscuit Making	30.0	26.8	+ 3.2	70.0	73.2	- 3.2	0.0	0.0	0.0
Fruit & Vegetable Processing	60.8	30.4	+ 30.4	39.2	69.6	- 30.4	0.0	0.0	0.0
Cement	0.0	0.0	0.0	45.0	50.7	- 5.7	55.9	49.3	+ 6.6
Glass and Glassware	2.0	2.6	- 0.6	86.2	89.5	- 3.3	11.8	8.7	+ 3.1
Ceramics	3.1	3.5	- 0.4	50.8	51.8	- 1.0	46.1	44.8	+ 1.3
Plywood and Tea-Chests	15.5	20.1	- 4.6	84.6	80.7	+ 3.9	0.0	0.0	0.0
Cotton Textiles	0.4	0.3	+ 0.1	9.2	5.9	+ 3.3	90.4	93.8	- 3.4
Woollen Textiles	3.2	3.2	0.0	35.1	27.8	+ 7.3	61.7	69.0	- 7.3
Edible Hydrogenated Oils	0.0	0.8	- 0.8	100.0	68.0	+ 32.0	0.0	31.2	- 31.2[a]
Paints and Varnishes	14.2	12.9	+ 1.2	85.9	87.1	- 1.3	0.0	0.0	0.0
Electric Lamps	3.8	3.7	+ 0.1	96.2	96.3	- 0.1	0.0	0.0	0.0
Electric Fans	7.0	5.3	+ 1.7	77.1	46.9	+ 30.2	15.9	47.8	- 31.9[a]
Engineering	19.2	25.7	- 6.5	46.3	41.1	+ 5.2	34.5	33.2	+ 1.3
Jute Textiles	0.0	0.0	0.0	0.8	0.7	+ 0.1	99.2	99.3	- 0.1
Chemicals	13.7	16.1	- 2.4	51.1	53.5	- 2.4	35.2	30.4	+ 4.8
Paper and Paperboard	1.0	1.0	0.0	15.0	17.1	- 2.1	84.0	81.9	+ 2.1
Matches	0.6	0.2	+ 0.4	16.5	5.9	+ 10.6	82.9	94.0	- 11.1
Soap	1.6	5.5	- 3.9	23.2	20.0	+ 3.2	75.2	74.6	+ 0.6
Tanning	32.3	37.0	- 4.7	68.0	63.0	+ 5.0	0.0	0.0	0.0
Starch	2.3	5.4	- 3.1	97.7	96.4	+ 1.3	0.0	0.0	0.0
Vegetable Oils	69.9	62.5	+ 7.4	30.1	37.5	- 7.4	0.0	0.0	0.0
Sugar	0.2	0.0	+ 0.2	60.9	47.9	+ 13.0	39.1	52.2	- 13.1
Distilleries and Breweries	17.8	23.3	- 5.5	82.2	76.9	+ 5.3	0.0	0.0	0.0
Wheat Flour	32.4	14.4	+ 18.0	67.8	85.6	- 17.8	0.0	0.0	0.0
Rice Milling	94.1	97.7	- 3.6	5.9	2.3	+ 3.6	0.0	0.0	0.0

Source: Computed from data in the Census of Manufacturing Industries, 1953 and 1958.

[a] The decline in the share of large units in these industries is due to some large units failing to file returns in 1958 and is, therefore, spurious.

11. There are only three industries in which more than half of the total value added is accounted for by 'small' units: rice milling, vegetable oil processing and fruit and vegetable processing - all food processing industries. In 10 out of the 29 industries more than half of the output is produced in 'large' units; and in 15 industries more than half of the output is produced in 'medium' units. In one industry - general and electrical engineering - about a third of the net output is produced in 'large' units, a little less than half in 'medium' units and about a sixth in 'small' units.

12. Thus we may characterize 10 out of the 29 industries as 'large-scale' industries, 16 as 'medium-scale' industries (including engineering) and only 3 as 'small-scale' industries.

13. It is noteworthy that the large-scale industries include many in which intensive efforts have been made to promote small unit production, for example, soap, paper, matches, cotton textiles, woollen textiles, bicycles and sewing machines. The development of the first five of these is the responsibility of the Khadi and Village Industries Commission and the development of the last two is looked after by the Small Scale Industries Board. But small units did not account for more than 6% of the net output in any of these industries except bicycles.

14. In some of the medium-scale industries, again - glassware, ceramics, hydrogenated oil, electric lamps and electric fans, starch and sugar - small units have a negligible share. In others - copper and brass, plywood, paints and varnishes, chemicals, distilleries and breweries - they have a small but significant share of 10 to 15%. In only three industries - biscuit making, tanning and wheat flour - they share about a third of the net output.

15. When we consider the changes between 1953 and 1958, we find that the relative importance of small, medium and large units did not alter materially. The small units increased their share significantly only in fruit and vegetable processing, vegetable oil extraction, flour making and bicycle making. In oil extraction the small units were already dominant. In the other three, they did snatch a sizeable share of output from the medium units. In the bicycle industry, large units as well as small units gained at the expense of medium units and the large units came to produce more than half of the output inspite of the expansion in small unit capacity fostered by the government.

16. The medium unit sector increased its share substantially in the hydrogenated oil, electric fans, match and sugar industries entirely at the expense of large units.

17. The large units made gains in non-ferrous metals, cement, paper and chemical industries while maintaining their dominant position in eight other industries.

18. The changes in the size structure of industries can also be analysed in another way. We can compute the weighted average size of the units in an industry in terms of the number of persons employed and compare them as between different industries on the same date and at different dates in the same industry. The 'weighted average size' may be defined as $\sum w_i s_i$, where s_i are the mid-points of the size intervals in terms of employment and w_i the proportions of value added in the various size classes.

19. Table 2 shows the weighted average size of the units in each of the 29 Census industries in 1953 and 1958. If we stick to our definition of large-scale, medium-scale and small-scale industries, it appears that, considering the size of the 'representative unit', 12 industries were large-scale industries, 16 industries were medium-scale industries and only one industry - rice milling - a small-scale industry in 1953. In 1958, two industries - non-ferrous metals and engineering - graduated from the medium-scale to the large-scale class. Other industries remained in the same class as before. But the average size increased in 19 industries and decreased in 10. Neglecting changes of less than 10% in the average size, we find that the average size decreased only in 5 industries, viz., fruit and vegetable processing, hydrogenated oil, matches, tanning and wheat flour. In 12 other industries, the average size increased by more than 10%.

20. From these findings we may conclude that:

(a) So far as the 29 Census industries are concerned medium and large units account for a major part of output except in 3 food processing industries. The share of the small units does not exceed 15% in any non-food-processing industry with the exception of tanning.

(b) During the 5 years of planned growth 1953-1958, cycle-making is the only non-food industry in which small units increased their share of the output significantly, but it still remained less than a sixth. On the whole, the relative share of production in large and medium units increased more than that of small units.

(c) The average unit size increased in 19 and decreased in 10 industries. But the industries in which the decrease was significant were, again, food processing, tanning and match-making.

21. It seems, therefore, that industrial growth in India is, by and large, following the historically familiar pattern[4] of the increasing dominance of large-unit production in a wide range of industries. Government effort to encourage small unit production does not seem to have succeeded in significantly altering this trend.

4 Statistical documentation of this trend in British and U.S. industry may be found in Florence, op. cit. and S.S. Sands, "Concentration in United States Manufacturing Industry, 1904-1947", International Economic Review, (January 1962). In Japan, as is well known, the trend has been somewhat different for special historical reasons.

TABLE 2

CHANGES IN THE WEIGHTED AVERAGE FIRM SIZE IN INDIAN INDUSTRIES 1953-58

Industry	Weighted Average Size (Number of Persons Employed) 1953	1958	Increase or Decrease Absolute	%
Aluminium, Copper and Brass	778	1,003	+ 225	+ 28.92
Iron & Steel	11,896	13,679	+ 1,783	+ 14.99
Bicycle	916	980	+ 64	+ 6.99
Sewing Machines	3,232	3,170	- 62	- 1.92
Biscuit Making	323	672	+ 349	+ 15.17
Fruit & Vegetable Processing	143	110	- 33	- 23.08
Cement	1,101	1,466	+ 365	+ 33.15
Glass & Glassware	478	651	+ 173	+ 36.19
Ceramics	1,572	1,570	- 2	- 0.13
Plywood & Tea-Chests	301	372	+ 71	+ 23.59
Cotton Textiles	3,366	3,725	+ 359	+ 10.66
Woollen Textiles	1,969	2,111	+ 142	+ 7.21
Edible Hydrogenated Oils	783	522	- 261	- 33.33
Paints & Varnishes	466	449	- 17	- 3.57
Electric Lamps	476	535	+ 59	+ 12.40
Electric Fans	612	695	+ 83	+ 13.56
Engineering	952	1,302	+ 350	+ 36.76
Jute Textiles	3,455	3,653	+ 198	+ 5.73
Chemicals	1,431	1,496	+ 65	+ 4.54
Paper & Paperboard	2,552	2,427	- 125	- 4.90
Matches	2,686	1,295	- 1,391	- 51.79
Soap	1,249	1,270	+ 21	+ 1.68
Tanning	265	234	- 31	- 11.70
Starch	365	440	+ 75	+ 20.55
Vegetable Oils	140	153	+ 13	+ 9.29
Sugar	1,187	1,109	- 78	- 6.57
Distilleries & Breweries	180	231	+ 51	+ 28.33
Wheat Flour	357	214	- 143	- 40.06
Rice Milling	56	58	+ 2	+ 3.57

Source: Computed from data in the Census of Manufacturing Industries, 1953 and 1958.

22. The explanation for this fact is not merely that the scale of the effort has been inadequate. It lies, above all, in the failure to widen the effective choice of techniques. So long as the imported techniques available for most of the consumer goods industries are economically viable only when production is organised on a large scale the scope for expanding the small-scale sector must remain severely limited. The small-scale sector will then remain confined to industries which are auxiliary to large-scale industries or only require design development or organisational improvement. But if it is to extend beyond these, nothing less than the discovery of a whole range of new techniques which can enable small units to produce almost as cheaply as large units will have to be discovered and adapted to the milieu of the newly developing countries. The future of small industry is bound up with the prospect of discovering such techniques. The scientific method is, in principle, neutral to the scale of operation. "There is nothing in the results of disinterested scientific research which makes it inevitable that they should be applied for the benefit of centralized finance, industry and government. If inventors and technicians so chose, they could just as well apply the results of pure science for the purpose of increasing the economic self-sufficiency and consequently the political independence of small owners, working either on their own or in cooperative groups."[5]

23. But inventors and technicians cannot choose to do so of their own accord. They would have to be persuaded, commissioned and paid to do so in pursuit of a bold new policy of developing new techniques. If governments, international organisations and scientists wish to translate the sociological advantages of small-unit operation into a reality they must devote more attention and resources to research oriented to the discovery and application of such techniques.

5 Aldous Huxley, Science, Liberty and Peace, 13-14.

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United States of America

POPULATION AND LABOR FORCE RESOURCES AS FACTORS IN ECONOMIC DEVELOPMENT

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Papers have been contributed to the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas as working papers for that Conference. They are published as presented by the contributors, and the contents and the views expressed are those of the contributors. (See notes overleaf.)

NOTES

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POPULATION AND LABOR FORCE RESOURCES AS FACTORS IN ECONOMIC DEVELOPMENT

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1. Economic development has as its objective the raising of the level of living of a people. The population of a nation, however, not only reaps the gains of economic development through increased per capita income but, as the human resource, also plays a vital role in its achievement. In the contemporary situation, four aspects of population in the less developed areas are operating to retard economic development. These are the relatively high rate of population growth, unfavorable age structure, unbalanced population distribution, and inadequately educated and trained manpower. All of these obstructions to economic development are amenable to control. But they cannot be controlled unless the ways in which they hamper efforts to raise levels of living are fully understood, relevant policies are formulated, and necessary programs put into operation. The relation between each of these population factors and economic development is briefly discussed in the materials which follow.

2. High Rates of Population Growth. The standard of living cannot be raised unless aggregate output increases more rapidly than total population. This relationship is shown in the following over-simplified equation: $L = \frac{O}{P}$, where "L" equals levels of living, "O" equals aggregate output and "P" equals population.[1/] It is clear from this equation that an increase in aggregate output does not result in any increase in level of living if, simultaneously, there is a corresponding increase in total population. The greater the rate of population increase, then, the higher must be the rate of economic growth to effect any increase in per capita income.

3. The implications of this equation may be readily seen in examining the population and income data for the world, as a whole, and for its continental regions. During the second half of this century, according to the United Nations "medium" population projections, world population will increase about $2\frac{1}{2}$ fold to reach a total of 6.3 billion by the year 2000. (Table 1). Drawing also on the United Nations data for aggregate income for the world and its regions (Table 2) the interrelationships between population increase and income increase may be observed. For example, considering the world as a whole, aggregate income between 1950 and 2000, must be increased 4-fold to match the 1950 per capita income of Europe, and by 12-fold to match the 1950 per capita income of North America. A decrease in world population growth to 0.5 percent per year, the rate actually experienced between 1800 and 1850, would diminish the task of raising the aggregate product of goods and services by some 75 to 80 percent.

4. A similar analysis is possible by regions. Latin America, whose population is projected by the UN to increase more than $3\frac{1}{2}$-fold during the second half of the century, would have to increase her aggregate product 8-fold to match the 1950 European level of living by the year 2000, and 23-fold to match the 1950 North American level of living. Africa, which may increase her population some $2\frac{1}{2}$-fold during the second half of this century, would require a 13-fold increase in continental income to match the 1950 European level of living by the end of the century, and something like a 38-fold to match the North American level of living. Finally, Asia, which according to the United Nations projections may experience a population increase during the second half of this century as great as the population of the

entire world in 1950, an increase of some 2.5 billion, would have to increase her aggregate income by a factor of 21 to match the 1950 European level of living by the year 2000, and by a factor of 62 to match the 1950 North American level of living by the same date.[2] Calculations of this type, over-simplified as they may be, nevertheless demonstrate that contemporary and projected rates of population increase in the economically less developed areas impose stupendous burdens upon them in their efforts to raise their living levels. Yet, ironically enough, there is an inverse relationship between the level of living of a region and its current and projected rate of population increase to the end of the century. (Compare Tables 1 and 2)

5. Rapid population growth also adversely affects investment to achieve economic growth. To effect an increase in output, investment increments must be great enough to produce income increments adequate to raise per capita income. Capital-income ratios indicate that to achieve an increment of one unit of income approximately three units of capital are required.[3] Populations increasing at a rate of 3 percent per year, already approximated by Latin America and other parts of the world and in prospect for most of the less developed areas in this century, must therefore achieve a savings of approximately 9 percent per annum, merely to maintain their present low levels of per capita income. Yet many of the economically less developed societies find it difficult to achieve a savings rate of more than 4 to 5 percent. It is doubtful that India, even with her prodigious efforts towards economic development, has as yet achieved a savings rate in excess of 10 percent. Thus, even with outside capital, she has been barely able to keep ahead of her 2 percent per annum increase in population.[4] This is why India has so much increased her effort to control population growth as an important factor in planning economic development.

6. Rapid population increase, however, is not necessarily a barrier to economic development. There can be little doubt that in the history of the present economically advanced nations rapid population growth may actually have contributed to increased product per head and to higher levels of living. But the man-resources ratio in the present economically advanced nations was, on the whole, much more favorable at their initial stages of economic growth than is true of the less developed areas today. In North America during the 19th century, for example, a resource-rich unexploited continent, rapid population increase undoubtedly contributed to increased levels of living. For with its low man-resources ratio, rapid population growth contributed to economies of scale. In the less developed areas today where there is already a high man-resources ratio rapid population growth contributes not to economies of scale but to diminishing returns.[5]

7. Finally, it may be observed that rapid population increase serves as a barrier to economic development not only in the manner indicated above but, also, in the way it may contribute to an unfavorable age structure, to excessive urbanization, and to retardation of effective investment in human resources.

8. Unfavorable Age Structure. High fertility areas have larger proportions of young persons than do low fertility areas. (Table 3) In Asia, Latin America and Africa in 1950, 40 percent or more of the total population was under 15 years of age. In contrast, in Europe and in North America, 26 and 27 percent of the total population, respectively, were under 15 years of age. By 1975, according to the United Nations "medium" projections, the age structures of the economically less developed, as compared with the economically advanced areas of the world, will not have appreciably changed. Because of their anticipated higher fertility rates they will still have larger proportions of their total population under 15 years of age.

9. The relatively large proportions of persons under 15 years of age in the high fertility, less developed regions of the world, may be interpreted as "unfavorable" to economic development for at least two reasons. First, the relatively high proportion of young persons below working age tends to reduce labor input per capita and, all other things being equal, tends therefore to reduce income per capita. Second, the larger proportion of young persons in the population requires that a greater part of limited resources be allocated to "social' investment rather than to

"economic" investment. That is, the more youthful the population the greater is the proportion of total savings that must be devoted to the rearing of the young, and the smaller is the proportion of total savings that is available for investment in agricultural or industrial projects designed to increase per capita production.

10. The adverse effects on economic development of the age structure of a high fertility society may be readily documented. Changes in age structure are the result of changes in fertility and mortality. Reductions in the death rate occur first of all and disproportionately among infants and youth. In consequence, reduced mortality tends to increase greatly the proportions of young persons in a population. On the contrary, reductions in the birth rate tend to decrease the proportion of young persons in a population. Over time, a population ages more rapidly by reason of a reduced birth rate than as the result of a decreased death rate.[6] The effect of reductions in fertility and mortality on the proportion of workers in a population and on "needs" per worker resulting from changes in age structure are presented in Table 4.

11. It may be observed that as mortality decreases, while fertility remains constant, there is a decrease in the proportion of "active" males, that is workers, in a population. For example, if the gross reproduction rate remains at a level of 3.0, the number of active males per 1000 population decreases from 286 when expectation of life at birth is 30 years, to 257 when expectation of life reaches 70 years, a decrease of 10 percent in the proportion of workers in a population. In contrast, as the birth rate declines while the death rate remains constant, an increase in the proportion of workers takes place. Thus, when expectation of life at birth is 30 years, a decline in reproduction rate from a level of 4.0 to 2.0 results in an increase in active males per 1000 population from 255 to 328, an increase of almost 30 percent. The joint effect of decreasing mortality and increasing fertility may also be measured. A death rate that has decreased to achieve an expectation of life of 50 years from a level of 30 years while the gross reproduction rate declines from 4.0 to 2.0, effects an increase in active males per 1000 population from 255 to 315, an increase of almost 25 percent.

12. Since many of the less developed areas of the world are in the process of achieving an increase in expectation of life at birth from approximately 30 years to 50 years, the entries under these two levels of expectation of life in Table 4 point to what may be the actual experience of such areas if reductions in fertility are effected.

13. The "needs" of a population are to some extent a function of its age structure; that is, consumption varies with age, for both children and elderly people have different needs from those of adults of intermediate age. The United Nations has estimated the changes in the needs of a population with changing age structure, expressing the needs of an adult as unity, 1.0, and the needs of a child or an aged person by 0.7 of a unit. The changing needs per 1000 active males in the population under the impact of changing fertility and mortality are shown in the lower panel of Table 4.

14. It is readily seen that as the death rate declines and expectation of life at birth increases, needs per 1000 active males increase. Thus, with a gross reproduction rate of 4.0, needs per 1000 active males would rise from 3,323 units to 3,672 units as expectation of life increases from 30 years to 70 years, an increase of over 10 percent. Contrariwise, a decrease in the birth rate while mortality remains constant has the effect of decreasing needs per 1000 active males. Thus, if expectation of life remains fixed at 30 years a decline in the gross reproduction rate from 4.0 to 2.0 would reduce needs per 1000 active males from 3,323 units to 2,699 units, or by almost a fifth. The joint effect of decreasing fertility and mortality may also be traced. Thus, if a gross reproduction rate declines from 4.0 to 2.0 while expectation of life increases from 30 years to 50 years, needs per 1000 active males decline from 3,323 units to 2,766 units, a decrease of about 17 percent. A decrease in the birth rate brings about a decrease in the needs of a population per 1000

workers as the net effect of an increase in the proportion of workers and of a decrease in young persons below working age.

15. The decline in the proportion of young persons contributes to economic development in still another significant way. For the smaller the proportion of persons below working age, the smaller is the proportion of total savings that must be allocated to the rearing of the young, and the greater is the proportion of total savings that may be allocated to productive investment. Hence, a decrease in the proportion of persons below working age simultaneously decreases the dependency burdens of workers and increases the proportion of total savings which may be placed in productive channels.

16. High fertility, then, under conditions of declining mortality, has the effect of retarding economic development not only in being responsible for high rates of total population growth but, also, in producing an age structure which adversely affects economic growth.

17. Imbalance in Population Distribution. High urbanization generally is identified with economically advanced areas and the advent of industrialization. Yet despite their relatively low rate of urbanization, the less advanced areas in Asia, Latin America and Africa, because they have such a vast total population, have more people living in cities of 20,000 or more, or cities of 100,000 or more, than do the economically advanced nations of Europe and North America combined. In 1950, Asia, Latin America and Africa, contained over 45 percent of the world's residents of cities of 20,000 or more; whereas, Europe (excluding the USSR) and North America contained but 41 percent of the world population living in cities of this size.1/ (See Table 5) Moreover, during the 20th century the rate of urbanization of Asia, Latin America and Africa has exceeded that of Europe and North America.

18. The degree of urbanization has quite different implications for economic development in the advanced than in the less developed areas. In the economically advanced nations, urbanization is both an antecedent and a consequent of high levels of living. It makes possible and advances the division of labor and specialization, the application of non-human energy to production, improved technology, economies of scale, external economies, minimization of the frictions of space and communication, and, in general, higher per capita income. In the economically less developed areas, however, urbanization tends to be the product of quite different factors and is not accompanied by corresponding increases in productivity and levels of living. In the less developed areas of the world today, urbanization is less the result of indigenous economic development and more the product of economic development of an historical imperial system focused largely on a "mother" country. Urban agglomerations in the less developed areas are more the product of the push of population from over-populated rural areas than the pull of population to urban centers by reason of greater economic opportunity. Furthermore, the recent acceleration in the rate of urbanization in many of the less developed areas reflects the disruption and disorganization produced by the war and post-war political instability creating a troubled countryside and large refugee populations. By reason of the above considerations, the less developed areas of the world may be said to be "over-urbanized" in the sense that larger proportions of their population live in urban places than is justified by their degree of economic development. More specifically, compared with the economically advanced nations at comparable levels of urbanization, a much smaller proportion of the labor force in the less developed areas is engaged in non-agricultural and especially mechanized industrial occupations.

19. In consequence, the relatively large urban populations in the less developed areas serve as a barrier rather than as an accelerant to economic development. To state that a less developed area is over-urbanized is to pose its major economic problem because what is meant is that it does not have an adequate economic base to support its urban population by the standards of the economically advanced nations. Such areas are faced with the problem of achieving higher levels of economic development to support their present, let alone their prospective urban populations. The

accelerating rates of urbanization which confront the less developed areas are likely to worsen rather than to ameliorate their poverty and distress. Asia, for example, is faced with the prospect of tripling her urban population in the quarter of a century between 1950 and 1975, assuming the population increase that is projected by the United Nations and the continuation of her 20th century rate of urbanization;[8/] and the prospects for Latin America and Africa are approximately the same. The fundamental economic problem of the less developed areas is that of achieving increased productivity. The many difficulties which obstruct the attainment of this objective are likely to be exacerbated rather than ameliorated by the present and prospective rates or urbanization.

20. Given the present levels of productivity and limited savings in the less developed areas, a major common problem relates to the allocation of resources for the improvement of agriculture, on the one hand, and the development of industrial sectors of the economy, on the other. In many nations improvement in the productivity of the agricultural sector of the economy may contribute more to rising levels of living than efforts to induce industrialization. The claims of large and growing urban populations and their growing political importance may require disproportionate allocations of limited resources to the development of the urban, rather than the agricultural, sectors of the economy, at the expense of a net increase in product per head.

21. The achievement of adequate balance between agricultural and urban industrial development is complicated by difficult problems of dividing limited savings between "social" and "productive" investment. This problem, although it is manifest both in the urban and in the rural sectors, finds its most acute form in the city. Urban areas in the less developed nations are characterized by inadequate infra-structure development which precludes the usual amenities of urban existence found in advanced nations. There is a great need and much temptation to allocate resources to social purposes such as the elimination of shanty towns, piped water, sewerage, better housing and social services for in-migrants. Social investment of this type, badly needed as it may be, can be made only at the expense of decreased investment in agricultural and industrial productive facilities--investment designed to increase productivity as in tractors and fertilizers or in power plants, factories and transport.

22. The already acute problems of the urban areas in the less developed areas, social and political, as well as economic, are intensified by the large internal migratory flows of population from rural to urban areas. This fact has been recognized by a number of nations which are making efforts to decelerate rural to urban migration by means of programs designed to raise levels of living of the rural population. It may well be that the quickest way to increase the levels of living of urban population may lie in agrarian reforms, including modification of outmoded land tenure systems, which would give the agricultural population a stake in the land, produce higher productivity, and induce the rural population to remain in rural areas.

23. Imbalance in the distribution of population between urban and rural areas, considered in relation to industrial and general economic development, may, then, operate to retard economic growth. Needless to say, such a maldistribution of population is worsened by excessively high rates of total population increase. The dampening of total population growth rates would undoubtedly bring about a sharp decline in the rate of urbanization and make a more balanced population distribution possible.

24. Quality of Human Resources. The three aspects of population which tend to retard economic development discussed above are each concerned with problems of quantity of population --total population, an unfavorable age structure, and imbalance in urban-rural distribution. Also operating as a barrier to economic development, is the low quality of population in the less developed areas, that is, the low general educational level and low skill of the population and most importantly of the labor force. High levels of illiteracy and the absence of a skilled labor force serve as major barriers to economic growth, particularly in the urban and industrial sectors of the economy.

25. It is becoming recognized that perhaps the most important single type of investment for achieving economic development is investment in human resources. In fact it is being argued that "investment in the human factor may well have a higher payoff in terms of increased output than does any other input."9/ Moreover, evidence is mounting that only a relatively small share of increased output is the result of increases in the conventionally regarded inputs of labor, land and capital combined. For example, recent studies suggest that for the period 1899-1953 in the United States, only a third of increased output may be accounted for by increased input of labor, land and capital. The remaining two-thirds of the increase in output seems to be the result of the combination of technology, organization and human capital together with all other factors.10 Moreover, the data suggest that of these latter four types of input, human capital may be the most important. Investment in human resources is essentially investment in the improved quality of population, as it may be achieved through increased education and training.

26. There is little need for elaborating the importance of increasing the level of education of a population as an important element in achieving economic development. A major barrier to raising the educational level of a nation, however, may be found in high fertility. This can be readily demonstrated. (Table 6) It is apparent that as mortality decreases while the birth rate remains fixed, total school construction needs may increase from a doubling to more than a quadrupling. Thus, with a gross reproduction rate of 3.0 an increase in expectation of life from 30 years to 70 years, would result in a $2\frac{1}{2}$ fold increase in school construction needs, an increase from 10 units to 25 units. Contrariwise, a decrease in birth rate produces a substantial decrease in school construction needs when mortality is held constant. Thus, for an expectation of life of 50 years, a decrease of more than two-thirds is effected in school construction needs when the gross reproduction rate declines from 4.0 to 2.0. That is, annual school construction needs declines from 29 to 8 units. If the birth rate is decreased along with declines in the death rate, appreciable decreases in school construction needs may be effected. For example, if the gross reproduction rate is decreased from 4.0 to 2.0 while expectation of life increases from 30 to 50 years, school construction needs are decreased by more than 50 percent -- from 19 to 8 units.

27. The gains that may be achieved from a reduction in birth rate in decreasing the investment necessary for educational construction may, of course, also be gained in decreasing the investment necessary for increasing teachers and educational facilities. Similar savings may be achieved on training programs, that is, the teaching of occupational skills.

28. Concluding Observations. Economic development policies and programs must take into account the role of population factors, in general, and specifically the four aspects of population which have been discussed above. To eliminate the adverse effects of population factors on economic development it is necessary to dampen rates of total population increase, to effect a more favorable age structure, to achieve a more balanced urban-rural population distribution, and to raise the quality of the population by attaining higher levels of education and training. Each of these goals is attainable, and, significantly enough, all may be achieved by the same means -- namely, through a decrease in the birth rate.

29. In the contemporary world situation, given the great declines in mortality achieved and in prospect, a decrease in the birth rate would simultaneously reduce rates of population increase, favorably alter the age structure, help to effect better balance between urban and rural population distribution, and permit more adequate and effective investment in human resources.

30. A decrease in birth rate seems a simple enough solution. But it is not easy of attainment. The hard fact is that in most of the less developed areas there is

neither incentive nor motivation for regulating family size. Moreover, it is not clear that the techniques for controlling fertility are as yet available which can be effectively employed in these areas. In the contemporary world there are no economically advanced nations which do not employ both death control and birth control. But, there is no guarantee that the methods that have proved to be effective in the economically advanced areas will automatically prove to be effective in the less developed areas.

31. There is a great need, therefore, for increased research both in the social sciences and in the natural sciences. Social science research is needed to learn more about how to increase motivation and incentive for the regulation of the family size. Natural science research is needed to learn more about human reproduction so that more effective methods for controlling fertility may be developed. Programs for the development and application of science and technology for the benefit of the less developed areas must necessarily embrace these needs.

FOOTNOTES

1. For fuller discussion of relation of population growth to economic development see: United Nations, The Determinants and Consequences of Population Trends, United Nations, New York, 1953, especially Part III, pp. 181-288; Lewis, W. Arthur, The Theory of Economic Growth, Richard D. Irwin, Inc., Homewood, Illinois, 1955, Chapter VI, especially pp. 304-330; Kuznets, Simon, "Quantitative Aspects of the Economic Growth of Nations: I, Levels and Variability of Rates of Growth," Economic Development and Cultural Change, V, 1, October, 1956, 5-94; Coale, Ansley J. and Hoover, Edgar M., Population Growth and Economic Development in Low Income Countries, Princeton, N. J., Princeton University Press, 1958, especially Part Four.
2. Hauser, Philip M., Population Perspectives, Rutgers University Press, New Brunswick, New Jersey, 1960, pp. 16-20.
3. United Nations, op. cit., pp. 277 ff. Also Ward, Barbara, The Rich Nations and The Poor Nations, W. W. Norton and Company, Inc., New York, 1962, p. 91. Kuznets, Simon, "Quantitative Aspects of the Economic Growth of Nations: V, Capital Formation Proportions: International Comparisons for Recent Years," loc. cit., VIII, 4, Part II, July 1960, pp. 1-96; and "VI, Long Term Trends in Capital Formation Proportions," loc. cit., IX, 4, Part II, July 1961, pp. 3-124.
4. Ward, Barbara, op. cit., p. 92.
5. Lewis, W. Arthur, op. cit., pp. 323 ff.; also PEP, World Population and Resources, Political and Economic Planning, London, 1955, pp. 90 ff. and also Part II, Chapter 4.
6. United Nations, The Aging of Populations and Its Economic and Social Implications, United Nations, New York, 1956, Chapter II.
7. The materials in paragraphs 17 to 23 are drawn largely from proceedings of UNESCO/United Nations seminars on urbanization and United Nations Seminar on Regional Planning published as follows:
   Hauser, Philip M. (ed.), Urbanization in Asia and the Far East, UNESCO, Calcutta, 1957
   Hauser, Philip M. (ed.), Urbanization in Latin America, UNESCO, Belgium, 1961.
   United Nations, United Nations Seminar on Regional Planning, United Nations, New York.
8. Hauser, Philip M., "Implications of Population Trends for Regional and Urban Planning in Asia and the Far East." Regional Planning: Housing, Building and Planning, Numbers 12 and 13, United Nations, New York, 1960, pp. 21-31.
9. Frank, Andrew Gunder, "Human Capital and Economic Growth," Economic Development and Cultural Change, VIII, 2, Jan. 1960, p. 170
10. Ibid, pp. 170 ff.

Table 1. Estimated population and population increases, by continent, 1900 to 2000

Area	Population (million)					Av. annual increase (%) a/			
	1900	1925	1950	1975	2000	1900-1925	1925-1950	1950-1975	1975-2000
World	1550	1907	2497	3828	6267	0.9	1.2	2.1	2.6
Africa	120	147	199	303	517	0.9	1.4	2.1	2.8
Northern America	81	126	168	240	312	2.2	1.3	1.7	1.2
Latin America	63	99	163	303	592	2.3	2.6	3.4	3.8
Asia	857	1020	1380	2210	3870	0.8	1.4	2.4	3.0
Europe (including U.S.S.R.)	423	505	574	751	947	0.8	0.6	1.2	1.0
Oceania	6	10	13	21	29	2.3	1.4	2.4	1.6

a/ Arithmetic mean of percentage of increase for 25-year periods.

Source: The Future Growth of World Population, United Nations, New York, 1958

Table 2. Population and income, by continent, about 1950

Area	Total population		Aggregate income		Per capita income ($)
	No. (thousands)	(%)	Dollars a/ (millions)	(%)	
World	2497	100.0	556	100.0	223
Africa	199	8.0	15	2.7	75
North America	219	8.8	241	43.3	1100
South America	112	4.5	19	3.4	170
Asia	1380	55.3	69	12.4	50
Europe (exclusive of U.S.S.R.)	393	15.7	149	26.8	380
U.S.S.R.	181	7.2	56	10.1	310
Oceania	13	0.5	7	1.3	560

a/ The calculations were made by using United Nations per capita income figures for each continent applied to revised United Nations estimates of 1950 population of continents to obtain revised aggregate income by continent and for the world. A new world per capita figure of $223 was obtained, as compared with the published figure of $230.

Source: "National and Per Capita Income of 70 Countries in 1949," U.N. Statist. Papers, Ser, E. No. 1, United Nations, New York, 1950

Table 3. Estimated Age Composition of the Population of the World and Continents, 1950 and 1975

Continent	Percent Distribution					
	1950			1975		
	Under 15	15 - 59	60 & Over	Under 15	15 - 59	60 & Over
World	37	56	7	38	54	8
Africa	42	54	4	41	54	5
Northern America	27	61	12	28	56	16
Latin America	40	54	6	42	52	6
Asia	40	55	5	41	54	5
Europe	26	62	12	24	59	17
Oceania	30	59	11	31	55	14
U.S.S.R.	33	59	8	30	59	11

Source: United Nations, The Future Growth of World Population, United Nations, New York, 1958, p. 35

Table 4. Estimated Active Males Per 1000 Population and Estimated Needs per 1000 Active Males at different levels of Expectation of Life at Birth and of Gross Reproduction Rate

(Activity Rates in Underdeveloped Countries) a/

Gross Population Rate	Expectation of Life at Birth 30 years	50 years	70 years
	Active Males per 1000 Population		
4.0	255	240	226
3.0	286	271	257
2.0	328	315	301
1.0	392	382	369
	Needsb/ per 1000 active males		
4.0	3,323	3,489	3,672
3.0	3,016	3,146	3,288
2.0	2,699	2,766	2,870
1.0	2,283	2,309	2,373

a/ For effects assuming developed countries activity rates, see source.
b/ Needs of 1 adult = 1.0.
Source: U.N. Population Studies, No. 26, The Aging of Populations and Its Economic and Social Implications, United Nations, New York, 1956, p. 62.

Table 5. Distribution of Urban Population of the World, By Continents, 1950

Continent	Total population %	Population living in cities of 20,000 and more %	Population living in cities of 100,000 and more %
World	100	100	100
Asia	53.2	33.8	33.7
Europe	16.4	27.5	26.5
North America	6.8	13.9	15.2
U.S.S.R.	8.1	12.0	11.2
South America	4.6	5.8	6.5
Africa	8.2	3.7	3.2
Central America	2.1	2.1	2.0
Oceania	0.5	1.2	1.6

Source: Philip M. Hauser (ed.), Urbanization in Asia and the Far East, UNESCO, Calcutta, 1957, p. 99

Table 6 Estimate of Total Annual School Construction Needs a/ per 1000 Active Males at Different Mortality and Fertility Levels

(Activity Rates in Underdeveloped Countries) b/

Gross Reproduction Rate	Expectation of Life at Birth 30 years	50 years	70 years
4.0	19	29	38
3.0	10	19	25
2.0	3 c/	8	13

a/ Construction required for one male pupil = 1.0
b/ "It has been assumed that, between the ages of 10 and 24, school attendance rates were equal to the difference between the male activity rates and 1 in the five-year age groups and that all children of from 5 to 9 years of age attended school."
c/ The difference between the rate of replacement needs (2.9 per 1,000) and the rate of vacancies occurring.

Source: U.N. Population Studies, No. 26, The Aging of Populations and Its Economic and Social Implications, United Nations, New York, 1956, p. 69

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DANS L'INTÉRÊT DES RÉGIONS PEU DÉVELOPPÉES

Point de l'ordre du jour : B. 2. 2

Italie

EXPERIENCES ITALIENNES EN MATIERE DE FORMATION PROFESSIONNELLE DES TRAVAILLEURS ET DE FORMATION ET DE PERFECTIONNEMENT DES INSTRUCTEURS

Par Aldo PALLAVICINO,
Ingénieur,
Directeur général, INAPLI

Les mémoires rédigés à l'intention de la Conférence des Nations Unies sur l'application de la science et de la technique dans l'intérêt des régions peu développées sont des documents de travail. Ils sont publiés tels qu'ils ont été présentés et les assertions et opinions qu'ils contiennent sont celles de leurs auteurs.

NOTES

1. Les mémoires choisis pour être présentés en séance générale pourront être obtenus à la Conférence dans les langues officielles suivantes des Nations Unies: anglais, espagnol, français et russe.

2. Les mémoires choisis pour être présentés en séance spéciale pourront être obtenus à la Conférence dans l'une seulement de ces langues officielles.

3. Les résumés qui ont été rédigés pour tous les mémoires par les auteurs de ceux-ci pourront être obtenus à la Conférence dans les langues officielles suivantes des Nations Unies: anglais, espagnol, français et russe.

4. Préalablement à la Conférence, les mémoires et les résumés ne feront pas l'objet d'une distribution générale mais d'un tirage restreint destiné aux délégations des gouvernements et autres participants officiels. La publication et la distribution générale des actes de la Conférence s'effectueront conformément aux règles et pratiques agréées par le Comité des publications des Nations Unies.

Ing. Aldo Pallavicino - Directeur Général, INAPLI

EXPERIENCES ITALIENNES EN MATIERE DE FORMATION PROFESSIONNELLE DES TRAVAILLEURS ET DE FORMATION ET DE PERFECTIONNEMENT DES INSTRUCTEURS

AVANT-PROPOS

Il faut d'abord déclarer que la formation professionnelle à un niveau non universitaire peut se dérouler, en Italie, par trois voies distinctes:

a) la voie scolaire;
b) la voie extra-scolaire;
c) l'apprentissage.

La préparation ou, pour mieux dire, l'instruction professionnelle réalisée par la voie scolaire, ayant également pour but de former l'homme et le citoyen, relève du Ministère de l'instruction publique et comprend différents types d'écoles auxquelles ont libre accès tous ceux qui, ayant dépassé l'age de scolarité obligatoire (c'est à dire 14 ans), désirent, dans les limites de leurs aspirations ou de leurs ressources, poursuivre les études et renvoyer ainsi à leur conclusion le début de toute activité de travail.

Ceux qui, au contraire, viennent à se trouver, naturellement après la période scolaire obligatoire, pour des motifs la plupart du temps d'ordre économique, dans la necessité de se procurer au plus tôt de quoi vivre moyennant une activité de travail (n'ayant toutefois pas un caractère générique), ont besoin d'une préparation technique et rapide à des métiers déterminés. Or les moyens de cette préparation ne sauraient ne pas revêtir un caractère extra-scolaire, puisqu'ils sont destinés à des sujets appartenant déjà, psychologiquement même, au milieu du travail. Ils sont représentés, dans le domaine de l'entreprise, par l'apprentissage (que la loi italienne envisage sous l'aspect d'un rapport particulier de travail) et, pour autant que ce dernier ne parvient pas encore à suffire pour tous les jeunes gens dont il est question, par des cours spéciaux de formation professionelle relevant (à l'instar des cours d'enseignement complémentaire pour apprentis) du Ministère du Travail et de la Protection sociale.

La coexistence de différentes voies de formation professionnelle a, par conséquent, sa raison d'être dans leurs finalités distinctes. D'un côté l'école, avec ses prerogatives formatives élevées, ses enseignements aux vues larges et toute la gamme de ses facteurs éducatifs, est ouverte à ceux qui peuvent attendre. De l'autre, celle que l'on pourrait aisément définir une "seconde voie de l'instruction", se présente à celui qui est déjà inséré (apprenti) ou cherche à entrer dans le milieu du travail. Il s'agit, dans ce cas, de moyens de formation professionnelle dont la liaison avec le domaine du travail est stricte et exclusive, étant donné qu'ils concernent des sujets déjà embauchés (en vertu d'un rapport, tel que l'apprentissage, expressément défini par la loi italienne - comme on vient de dire - un rapport de travail) ou inscrits dans les listes des bureaux de placement (jeunes gens à la recherche du premier travail et adultes en chômage, dépourvus, les uns et les autres, de toute préparation professionnelle).

Toute l'activité formative promue, financée et contrôlée par le Ministère du Travail est, dans ses grandes lignes d'évolution, le reflet des événements économiques et sociaux de cet après-guerre. Restreinte au début à l'oeuvre de qualification et requalification professionnelle des chômeurs que la guerre avait multipliés, elle s'est consacrée en ces derniers temps particulièrement aux jeunes gens et, plus précisément à ceux d'entre eux qui, ayant atteint l'âge du travail, s'inscrivent dans les listes de placement, signifiant ainsi leur décision de considérer révolue leur vie scolaire pour s'insérer dans le milieu du travail. Ce sont là, en effet, les jeunes qui, ne poursuivant pas leurs études et ne se vouant à aucun apprentissage, pourraient difficilement acquérir, sans l'aide de l'Etat, une formation professionnelle satisfaisante.

Les activités formatives, outre les chômeurs et les jeunes gens dépourvus d'occupation, offrent aussi aux travailleurs embauchés et qualifiés la possibilité d'améliorer et d'enrichir leurs connaissances, moyennant des cours d'avancement du travail, en vue de changements d'occupation ou de progrès dans la hiérarchie professionnelle.

Compte rendu des sujets auxquels elles sont destinées, les activités formatives se caractérisent par leur rapidité (durée maximum de deux ans), ainsi que par leur teneur éminemment pratique. Elles doivent, en effet, agir - aux termes de la loi - moyennant l'application des élèves à des travaux se rapportant à la profession ou au métier qui fait l'objet de l'enseignement.

Ces cours (dont les types et la durée ont été adaptés aux différentes exigences ainsi qu'aux diverses phases de la formation professionnelle) se tiennent pratiquement des sièges stables, reconnus aptes du point de vue technique par le Ministère du Travail et qu'on appelle Centres d'entraînement professionnel (ils sont actuellement au nombre de 1.000 environ). Leur gestion est confiée à des établissements constitutionnellement attachés à la formation professionnelle des travailleurs.

La fréquentation des cours, de toutes façons gratuite, se traduit même, pour les travailleurs en chômage, en instruments, quoique modeste, de secours économique. A tous les élèves (tant aux adultes en chômage qu'aux jeunes gens sans occupation) est délivré, à l'issue de l'activité d'entraînement et à condition qu'ils aient passé les examens finals, un brevet valable, à conditions égales, comme titre de préférence dans l'embauchage et l'émigration.

Du point de vue didactique il faut mettre en évidence que, la rapidité indispensable de la formation ne devant aucunement porter préjudice à la qualité ainsi qu'au rendement de la formation elle-même, le Ministère du Travail a voué et voue des soins particuliers à la recherche de méthodes de formation rapide représentant l'optimum dans tous les secteurs de l'entraînement, ainsi qu'à la préparation et au développement culturel des instructeurs chargés de l'application didactique de la méthode adoptée, l'expérience ayant démontré, sous ce dernier aspect, que la réussite des activités de formation dépend essentiellement de l'emploi d'instructeurs sélectionnés, joignant à la préparation professionnelle les capacités didactiques et pédagogiques nécessaires pour dispenser avec profit les enseignements théorico-pratiques propres à chaque cours. Dans ce but le Ministère du travail s'est fait promoteur d'institution "modèle" veillant simultanément, par rapport à des métiers déterminés, à la formation d'instructeurs ainsi qu'à la qualification des travailleurs.

Dans le domaine de l'occupation, enfin, le Ministère du travail veille constamment à ce que la formation professionnelle soit organisée et développée en visant à de concrètes possibilités de travail, afin qu'elle ne se résolve en elle-même sans atteindre les finalités qui la justifient. Par conséquent, tandis que l'on a réduit ou éliminé dernièrement toutes les activités tendant à la qualification dans des métiers qui sont déjà suffisamment desservis par l'apprentissage ou dont le marché du travail est désormais saturé ou dont il a toujours moins besoin à cause de l'évolution technico-productive en acte, les interventions en matière de formation professionnelle se conforment toujours plus à un ordre de priorité étroitement lié aux exigences du marché du travail ainsi qu'à ses perspectives de développement.

LES PRINCIPAUX PROBLEMES DE LA FORMATION PROFESSIONNELLE DANS LES EXPERIENCES ITALIENNES

D'après les expériences réalisées en Italie, on peut affirmer que les problèmes les plus strictement liés à la formation professionnelle des travailleurs concernent:

1) - les méthodologies de formation;
2) - la formation et le perfectionnement périodique du corps enseignant;
3) - l'établissement d'un programme, à court ou à long terme, des activités de formation;
4) - les sièges de formation;
5) - le financement et la gestion des activités de formation.

Pour ce qui est des méthodologies de formation, il faut souligner que, tout en respectant les différentes méthodes d'action ainsi que la liberté d'effectuer des expériences originales, elles ne doivent pas moins s'inspirer, autant que possible, de schémas unitaires et de principes de rationalisation permettant de laisser tomber tout empirisme pour chercher, au contraire, les modes et les formes jugées plus aptes à atteindre les résultats de formation les plus élevés dans le plus bref délai. Et cela, aussi et surtout dans le but de garantir un résultat non seulement au niveau le plus haut mais uniforme dans tous les établissements de formation, de façon à assurer aux travailleurs, partout où leur formation a eu lieu, l'obtention de qualifications professionnelles au contenu intrinsèque réellement uniforme.

La loi italienne sur la formation professionnelle (qui date de 1949) n'a point expressément prévu de particulières initiatives concernant la formation du corps enseignant à affecter aux Centres de formation professionnelle. Mais, en vertu des accords intervenus en 1952 entre le Gouvernement italien et le Bureau International du Travail, ce problème, vraiment fondamental aux fins de la bonne réussite des activités de formation, a été traité et mis en voie de solution moyennant l'institution de deux Centres Nationaux pour la formation d'instructeurs, situés respectivement à Gênes (pour certains métiers concernant les métaux) et à Naples (pour certains métiers touchant au bâtiment).

Tandis que le résultat de cette initiative a été et demeure remarquable du point de vue de la qualité, elle n'a point donné, du point de vue de nombre, des résultats aussi satisfaisants, vu la pénurie des places disponibles dans les Centres Nationaux en question (10 places chaque métier).

C'est ce qui a poussé le Ministère du travail à se faire promoteur - dans les Centres Nationaux - de cours de perfectionnement (appelés "cours de ~~renseignement~~ didactique") , destinés à des instructeurs déjà en service. Ces cours (dont la durée oscille de 4 à 6 semaines) ont eu et conservent le but de suppléer à une exigence immédiate, c'est-à-dire de garantir pour chaque Centre de formation professionnelle, la présence, au début, d'au moins un instructeur formé par les Centres Nationaux, secondé par des instructeurs ayant suivi des cours de perfectionnement technico-didactique. Le but final est naturellement celui de confier l'enseignement à des instructeurs expressément formés dans les Centres Nationaux institués ou à instituer.

Mais on l'atteindra, forcément par degrés, vu le déséquilibre existant actuellement, entre le grand nombre d'instructeurs nécessaires aux Centres de formation professionnelle considérés dans leur ensemble et les possibilités restreintes de formation représentées quant au nombre - comme l'on vient de dire - par les Centres Nationaux des Gênes et de Naples.

La voie entreprise, tout en étant le résultat d'un état de nécessité, semble la plus indiquée pour promouvoir dans tous les Centres de formation professionnelle un progrès uniforme et harmonieux dans la qualité des enseignements théorico-pratiques en vigeur.

L'établissement d'un programme - à court ou à long terme - des activités de formation professionnelle implique une prévision exacte des lignes de développement de l'économie, dans le temps et dans l'espace. Tout en ne passant point sous silence la difficulté que représente une prévision de ce genre, il n'en est pas moins vrai que l'établissement d'un programme, surtout dans les pays en voie de développement, correspond à l'inéluctable nécessité d'adapter la préparation des forces de travail au besoin immédiat et médiat de main-d'oeuvre qualifiée et spécialisée propre au milieu productif. Il n'y a que cela, en effet, pour éviter de dangereux fléchissements ou des arrêts dans le rythme d'expansion économique, découlant de la pénurie d'ouvriers suffisamment préparés aux tâches toujours plus difficiles qu'impose le dynamisme de l'économie et de l'évolution rapide et incessante des techniques de la production.

L'établissement d'un programme des activités de formation, inséré dans le cadre plus vaste de la planification économique et, par conséquent, prévu et réalisé en vue de possibilités concrètes d'occupation, garantit dans la plus large mesure l'embauchage prompt et permanent des travailleurs qualifiés, en évitant ainsi que le processus de formation manque le but dont il tire sa raison d'être. En d'autres termes, il faut à tout prix éviter que les travailleurs ayant reçu une formation restent désoeuvrés pendant de longues périodes de temps dans l'attente que leur occupation s'avère (nouvelles sources de travail), amenuisant ou perdant ainsi dans l'attente la préparation acquise.

Au cas, enfin, où, faute de moyens financiers, la réalisation intégrale des interventions au programme ne serait pas possible, il faudra s'en tenir à des choix précis, dans l'observance de critères de priorité dont l'efficacité découlera de l'évaluation attentive des exigences essentielles de développement économique.

Pour ce qui concerne les lieux de formation, les expériences italiennes démontrent que la préparation extrascolaire des travailleurs obtient des résultats plus remarquables quand elle se déroule, plutôt que dans des résidences occasionnelles, auprès d'établissements pourvus de tous les aménagements et outillages nécessaires, affectés de façon permanente au déroulement de cours de formation professionnelle. Cela ne signifie pas, toutefois, que l'on doive aboutir à un système rigide étant donné qu'il serait même souhaitable que les sièges mêmes, ayant un caractère permanent, soient susceptibles de déplacement ou de changements dès que les modifications territoriales ou qualitatives du marché du travail le conseillent ou l'imposent. Dans le cas contraire on risquerait de poursuivre dans la qualification des travailleurs pour des métiers ou des professions en déclin ne correspondant plus aux exigences immédiates ou médiates de la production.

Dans le domaine, enfin, de certains secteurs de l'activité productive (tel, par exemple, le secteur agricole) la formation professionnelle des travailleurs serait mieux avantagée, vu les particulières exigences didactiques ainsi que les particulières situations d'ambiance, à des sièges occasionnels, pourvu qu'ils répondent, bien entendu, aux conditions indispensables de l'aptitude technique.

La gestion des Centres de formation professionnelle n'est pas tenue en Italie - comme on l'a brièvement dit dans les pages précédentes - directement par le Ministère du travail, mais elle est confiée à des établissements constitutionnellement attachés à la formation professionnelle des travailleurs. Les expériences réalisées, tout en démontrant la validité de ce plan d'action, conseillent cependant de ne pas pulveriser dans un trop grand nombre d'établissements la gestion des Centres et des cours, pour la concentrer au contraire sur un nombre restreint d'institutions (dont le rayon d'action couvre, de préférence, le territoire national tout entier) lesquelles, grâce à l'efficacité des structures, et aux qualités objectives indispensables, inspirent toute confiance et sont à même de sauvegarder l'esprit unitaire des programmes.

L'établissement des programmes, la coordination et le contrôle des activités de formation doivent, par contre, avoir leur siège dans un organisme central unique. Cet organisme est représenté en Italie, comme nous venons de le dire, par l'Administration même de l'Etat, dans son émanation de l'Administration du travail et de la prévoyance sociale. En ce qui concerne notamment l'élaboration des plans d'intervention, la préparation des programmes didactiques, l'unification des méthodologies de la formation, la préparation et le perfectionnement du corps enseignant, de même que toutes les exigences similaires, il est absolument indispensable que l'organisme auquel revient la responsabilité de la formation extra-scolaire des travailleurs (qu'il s'agisse du Ministère du travail ou d'un établissement spécial) soit secondé de façon permanente par des groupes de techniciens et d'experts (recrutés aussi et surtout dans les associations syndicales des travailleurs et des patrons), dans le but de sauvegarder les activités de formation, soit dans les planifications de principe soit au cours de leur réalisation pratique, contre toute improvisation, désorganisation et empirisme.

Le financement des activités de formation est assuré en Italie par un fonds spécial, géré par le Ministère du travail, et alimenté par un apport annuel de l'Etat et des contributions extraordinaires, elles aussi établies annuellement, à la charge de la gestion de l'assurance contre le chômage involontaire.

On ne cachera pas que le montant variable de ces contributions, leur fréquente insuffisance et, souvent, l'irrégularité de leur assignation, sont autant de facteurs qui ont exercé une influence négative sur le développement numérique et qualitatif des activités de formation, empêchant, en définitive, l'inauguration d'une authentique politique de plan dans ce secteur délicat de l'intervention des pouvoirs publics.

C'est la raison pour laquelle, en Italie, le Ministère du travail est en train d'élaborer sur la base des expériences acquises dans l'espace de 13 ans, une mesure générale de réforme de l'entraînement professionnel, en vertu de laquelle on tâchera de résoudre d'une façon appropriée le problème financier.

CONCLUSIONS

On peut affirmer, en synthèse , que, par les voies et les moyens que l'on vient brièvement de décrire, le Ministère du travail a visé et vise, en Italie, deux objectifs essentiels: la rapidité de l'intervention, et l'amélioration qualitative progressive de l'intervention même

Dans le cadre de ces finalités (naturellement valables partout) et aux fins de l'assistance technique aux pays sous-développés, les formes de secours les plus indiquées semblent être au nombre de deux, selon les circonstances.

La première, qui est sans doute la plus aisée du point de vue organisation consiste à prêter une aide tendant à créer ex novo des structures valables dans le secteur de la formation professionnelle. Dans ce cas, des techniciens italiens, se basant sur les expériences réalisées en Italie, qu'ils adapteraient opportunnément au pays ou aux pays à assister, pourraient donner un apport valable dans l'institution d'organismes centralisés de propulsion et de coordination et, en même temps, aider à la formation du corps enseignant ainsi qu'à l'étude et à la réalisation de structures de formation propres à répondre, de la façon la meilleure, aux exigences locales particulières.

Au cas où l'assistance concernerait , au contraire, des pays déjà pourvus de structures de production, les expériences italiennes, opportunément adaptées aux exigences locales, pourraient se démontrer particulièrement efficaces pour la modification et l'amélioration des structures mêmes.

Soit dans le cas de la création de nouvelles structures, soit dans celui de la modification de structures existantes, il est absolument nécessaire - on le répète - de parvenir à l'institution d'organismes qui soient à même, par la centralisation des études et des contrôles, de garantir pour les interventions en matière de formation professionnelle un esprit unitaire dans l'établissement des programmes comme dans la réalisation des interventions mêmes.

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NOTES

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Mobilization of Manpower Potential in Asia and Africa[1]

by

Klaus Billerbeck

1. The point of departure of this study is the fact that there are some hundreds of millions of more or less idle workers in the developing countries. This fact is insufficiently taken cognizance of by the politicians of the developing countries and in the development policies of the industrial countries. Up to now development policies have been restricted to forms of production and organization which essentially correspond to the standard of the industrial countries. It is characteristic of these policies that they should mainly rely on those production factors "capital" and "technical economic know-how" which are especially rare in the developing countries; this gives them a typical Euro-American character. Thus throughout the developing countries development centres based on the pattern of Western technological civilization have arisen, whose underlying forms of production and ways of living do not differ from those of the traditional industrial countries.

2. The result is that the limits of this development policy must be rather narrowly set. Development projects implemented in these countries are therefore necessarily restricted to relatively small areas, mostly to a few larger towns and cities and the surrounding areas. The vast expanses of the country with the majority of the population and the greater economic potential are not covered by development projects. Thus the gap continuously widens between the small industrial centres and the rural areas of the developing countries.

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1. Billerbeck, Klaus, Extract from a study on "Mobilization of Manpower Potential in Asia and Africa," Hamburgisches Weltwirtschafts-Archiv (Hamburg Archives of World Economy), 169 pages, Hamburg (1961)

3. Therefore we must seek to elaborate a new community development policy supplementing our present policy. In so doing we cannot raise the same high claims on those scarce production factors "capital" and "technical economic know-how." The development of rural areas, a task not yet covered by any development policy, can only be undertaken by making use of existing dormant production resources in these areas, i.e. chiefly by mobilizing the idle manpower potential.

4. The utilization of dormant production resources must be based in the first instance on self-help, i.e. self-help in so far as the necessary steps must be taken almost exclusively by the developing countries themselves without any substantial support by the industrial countries, and self-help in so far as the main efforts must be made by the rural population itself, on the whole gratuitously, responsibly, and jointly. Secondly, the effort must be made to gradually improve the primitive techniques and appliances in use in the villages. It is not the aim of the supplementary development policy here under discussion to achieve the mechanization of agriculture or to equip village craftsmen with modern machinery and electric motors. The purpose is rather to develop more modern techniques which, compared with the achievements of our technological civilization, may seem very primitive but which constitute an essential step forward for these villages, with their traditional economic forms.

5. There are in the rural areas above all three sectors for the development of which the idle manpower potential can be exploited, as primitive techniques are gradually improved.

(a) The increase of agricultural production (e.g. by terracing fields, planting shrubs and trees, utilizing available natural manure, etc.).

(b) The promotion of village crafts and village industries. Today many goods for the consumption of the rural population are still being produced in the villages themselves. The production techniques which have in many cases remained unchanged for centuries can also gradually be improved with simple means. The level of supply and consumption in the villages could thus be raised considerably. There are many ways of raising productivity and the standard of living of those engaged in village industries without any great expense: improving slaughtering and tanning techniques to produce leather of better quality; replacing certain wooden parts of hand looms by metal ones to increase working speed; constructing more effective handpresses to extract oil from seeds and fruits; discovering new methods of mixing for village soap and paper production. Village industries can also make most of the equipment needed for village development work, e.g. simple ox-driven mowing machines, winnowing equipment, Göpel threshing machines of simple design, Göpel pumps, looms, oilpresses and mills, boiling pans for soap and sugar, equipment for drying, mixing and pulverizing natural dung. Even energy can be supplied by relatively primitive means. (In a village near New Delhi, the first generator designed specifically to convert "bullpower" into electricity began operating in the summer of 1958).

(c) The implementation of community projects for a single village or for several villages. If all those who are without work were to join together in labour units of some form or other it would be possible, under the prevailing conditions and with very primitive tools, to build schools or kindergartens or community centres with rooms for adult education or a health service. Feeder roads to the government-financed main roads could also be built; the village streets could be cleaned, provided with drainage, and paved with stones; wells could be sunk, irrigation plants and water tanks could be constructed, etc. In joint community work waste land could be afforested and arable land be protected against floods. All this could be done without any financial assistance from outside simply by calling on the manpower and production resources of the village or villages. That it can be done has been shown by the work of the Community Development Organization.

6. Experiences gained by the Community Development Organization has shown that the following measures must be undertaken in implementing a programme for the development of rural areas based on the mobilization of idle manpower and the improvement of primitive techniques and appliances;

(a) A plan for the development of the village economy must be carefully elaborated. This plan should be harmonized with and integrated into overall development planning.

(b) A development organization serving practically every village must be created. An active member of this organization should be sent to every village with the task of illustrating the potentialities of self-help to the villagers, helping them to organize a system of self-help, and where necessary procuring technical assistance from the government for this village in the form of specialists for agriculture, irrigation or handicraft.

(c) Village assistants and specialists who are to counsel the village population must be trained for their task. Consequently training centres must be established. In addition, the establishment of research centres is necessary since methods and ways must be found to gradually improve the primitive techniques and appliances.

(d) The financing of any such programme by the government must be ensured.

(e) The formation of village organizations and village groups, the foundation of cooperatives, the setting up of youth clubs and women clubs, in short, the organization of the villagers, who until now have only known the social link of the family, into various interest groups must be fostered. The fellah will then not only be a member of his family, but at the same time, for example, a member of the Parents' Council, a member of an agricultural cooperative, a member of the Executive Council of the village in charge of various kinds of work etc.,

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A series of additional measures are also necessary.

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2. For further details see: Billerbeck, Klaus, Mobilization of Manpower Potential in Asia and Africa, Hamburgisches Weltwirtschafts-Archiv, Hamburg (1961) pages 74 - 125.

7. It is a decisive question whether and to what extent such a development programme can be implemented without having to fall back on compulsory measures. We know that the Community Development Programmes, envisage no compulsory measures whatsoever and leave everything to the voluntary decisions of the village population. A study of community development policies in developing countries, based on the extensive literature cited in the bibliography, the author's own visits to developing areas and especially an analysis of the reports of the Indian Programme Evaluation Organization, reveals how protracted and wearisome a development policy proves to be when it is based on complete freedom and how easily the hard-won successes can be nullified by set-backs. With all due respect to community development work in the past, the overall picture is still extremely disappointing.

8. To give an example: Within the framework of the Community Development Organizations the villagers themselves decide which projects they want to implement. It should be taken into consideration that even in the advanced, industrialized democracies of Western Europe and North America the inhabitants of a particular locality are not specifically asked whether they would first like to have a new hospital or a new road. Such decisions are taken by the competent authorities and the community's representatives on the local council; the individual citizen can only exercise his influence indirectly at election time. If however, local building plans cannot take individual citizens' subjective needs into account even in advanced democratic countries, where the general standard of education is incomparably higher than that of village communities in developing countries and where the relationship between the population and its well organized authorities is entirely different, the amount of consideration given to the wishes of individual villages by existing community development policies must surely be viewed as an irresponsible exaggeration of democratic tenets which can only lead in the end, to a misguided and absurd abuse of the principle of freedom.

9. The most crucial point however, is that with the Indian conception of development, the vital task of employing mass labour cannot be mastered and without including all idle manpower of certain age groups and employing it on large-scale projects in an efficiently organized fashion the full mobilization of labour as a productive factor is impossible. Unless properly organized labour squads can be formed and applied, any policy of rural development will remain but a makeshift incapable of gathering momentum. This is the chief reason why community development programmes have hitherto not succeeded in raising the standard of living and production in the villages to any appreciable extent. The general reluctance to apply some form of compulsion, which would be unavoidable in conscripting a labour force, for example, in the last resort accounts for the fact that the ideas of comprehensive village development and full mobilization of idle labour resources have not been able to penetrate any community development programme. It has also prevented the formation of village development "cadres" with an effective practical impact, which could be done with ex-members of an army or national labour force, since during their period of compulsory service they would not only have acquired a sense of discipline and a new feeling of community, but would also know from experience how organized group activity can be used to tackle development projects even with primitive means.

10. The very fact that so far neither the democratic nor the authoritarian non-Communist developing countries have tried out coercion as a means of mobilizing idle manpower potential in itself suggests that the democratic system need not be an obstacle to the adoption of such methods. This supposition is strongly supported by the realization that in applying the necessary minimum of coercion the developing countries could well be guided by the example of industrialized democracies. Hitherto the democratic principles adopted by developing countries have generally been applied much more extensively and rigorously to the rights of citizens than to their duties. In these countries today, notably in India, the ones where democracy functions best, the obligations of the citizens can be regarded as "under-developed" by comparison with those of a citizen in industrial countries. In the economically advanced democracies of North America and Western Europe it goes without saying that every citizen works not only for the benefit of himself and his own family but also for the benefit of the community. This not inconsiderable contribution to community welfare which in some form returns to the individual citizen (civil order and legal protection, education, hospital service, public utilities etc.,) is made largely in the form of taxes. The form of the contribution does not affect the fact that every citizen is compelled by taxation laws to present a part of the product of his work to the community.

11. By contrast, the developing countries generally do not possess anything like such a comprehensive taxation system nor the administrative facilities needed to cover all tax payers in practice. In addition to the fact that the inadequacies of the administrative machine present much greater opportunities for tax evasion, it is plain that large sections of the population are hardly liable for tax, if at all, because their incomes are so small. This is particularly true of rural populations, although it also applies to the urban proletariat. A large part of the village population has no means, other than its own labour of increasing the contribution made to the community as a whole and thereby creating the conditions necessary for a general rise in the standard of living and production. The tax payer in industrial countries is not left to decide of his own free will how much he contributes to the welfare of the community; by analogy there is no reason why the village inhabitant of a developing country should be left to decide whether and to what extent he will offer his labour for the execution of community projects. The direct fulfillment of obligations to the community by means of work ought therefore to be solidly based on legislation and effectively enforced by statutory powers in just the same way as the indirect contribution of the citizen of an industrial country in the form of taxes. By the introduction of a tax payable in the form of work it would be possible to achieve a great many of the aims of village development policy. (The urban proletariat would of course, have to be included in the liability to pay such a tax).[3]

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3. For further details see: Billerbeck, Klaus, Mobilization of Manpower Potential in Asia and Africa, Hamburgisches Weltwirtschafts-Archiv, Hamburg (1961) page 151 ff.

12. Since the imposition of labour tax is capable of mobilising on an appreciable scale only seasonally unemployed labour, an attempt must be made to solve, at least partially, the problem of permanently unemployed manpower as well. This can also be done on lines analogous to those followed in the democratic countries of Europe and America. In most advanced nations a period of compulsory military service is the rule, all healthy young men of certain age groups being called up for one or two years of national service. Conscription of this kind only encounters isolated resistance in such countries and is generally accepted by public opinion as a necessary means of guaranteeing national security. In developing countries, on the other hand, there is either no military service at all or it only exists in the statute books because there are no practical facilities for dealing with all those who are theoretically liable for service.

Here again the communal obligations of a young citizen in a developing country are much more limited than those of his counterpart in an industrial country. The mobilization of idle manpower for compulsory labour need only mean that young men are called up for service to the community comparable to military service elsewhere. Nobody liable for conscription can evade the call-up in industrial countries, and there is no reason why legislation should not be introduced in developing countries to make service with a labour force compulsory and enforceable. If military service in democracies can be justified by the argument that it is essential for the security, defence and even the existence of the state there can, in our view, be no doubt that the national survival of the developing countries depends at least as much on organizing idle labour and employing it productively. Finally, it should not be forgotten that some form of compulsory labour service has been introduced several times by democratic governments during crises, as in the case of the Civilian Conservation Corps in the U.S.A during the world economic depression. The institution of a labour force of young men of a certain age group (and perhaps young women) would enable large-scale projects belonging to the sphere outside the village to be carried out; thus providing the necessary complements to the smaller projects completed within the village sphere by means of the labour tax. In addition, it would permit the employment of young members of the urban population for rural development. It is true that the labour service would only affect part of the permanently unemployed manpower potential directly. In the village, however, the call-up of robust young people would have an indirect effect on the total labour potential, since more of the regularly unemployed would be brought into productive activity to replace those who were withdrawn. [4]

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4. For further details see: Billerbeck, Klaus, Mobilization of Manpower Potential in Asia and Africa, Hamburgisches Weltwirtschafts-Archiv, Hamburg (1961) Page 155 ff.

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ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

Agenda Item: B.3

United States of America

THE ENTREPRENEURIAL ELEMENT IN ECONOMIC DEVELOPMENT

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Papers have been contributed to the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas as working papers for that Conference. They are published as presented by the contributors, and the contents and the views expressed are those of the contributors. (See notes overleaf.)

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THE ENTREPRENEURIAL ELEMENT IN ECONOMIC DEVELOPMENT

No. 707
B.3

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1. Much has been written on entrepreneurship in the literature concerning economic growth, and this variable customarily is designated as a pertinent factor in economic development. Although there have been case studies of the emergence of entrepreneurship in several developing countries, generalizations on entrepreneurial roles and contributions have been rare; there is even some uncertainty as to the proper definition of the concept. This paper suggests some general principles relating to the performance of entrepreneurial functions in the process of economic growth, in general, and in the developing countries, in particular.

2. The definition of entrepreneurship, as of many other concepts in economics, does not lend itself to uniformity. Entrepreneurs are classed by some primarily as innovators; others regard them as managers of enterprises, and bearers of risks; some place major emphasis on their functions as mobilizers and allocators of capital. Joseph Schumpeter, in 1912, expressed the view that the specific role of entrepreneurs is in the carrying out of innovations. Schumpeter wrote at a time when most entrepreneurial performance was in the hands of private individuals, and government and private bureaucracies still played a relatively limited part in the running of economically significant enterprises. In the past 50 years, however, the corporation and other highly structured public units perform more and more of the main entrepreneurial function in countries whose economy is traditionally based on free enterprise. In socialist countries public officials working in government enterprises or government-controlled corporations may carry the entrepreneurial function; in the developing countries government officials may control some important branches of production. Hence, the individual, "irrational", visionary entrepreneur whom Schumpeter saw as the main carrier of economic progress has been largely replaced by a private or public "business leader" whose action may be based on known and predictable principles, whose risk has been greatly reduced, and whose activities are supported by a large corporation or a governmental agency. These functions have become so routine that the performance of the typical entrepreneurial functions stipulated by Schumpeter has become either impossible or superfluous.

3. The concept of entrepreneurship as advanced by Schumpeter has been modified in light of the developments in the last few decades, especially in Asian and African countries. Most of the business leadership in these countries is, or may be, carried out by managers of large private or public enterprises, or by small or medium-scale entrepreneurs. Scarcely any of these are innovators in the Schumpeter sense. The technology applied is usually borrowed from abroad. The legal and marketing practices are generally adaptations from more economically advanced countries. Often the commodities produced are imitations of the consumer goods of the more advanced nations.

4. In view of these considerations, it is necessary to modify Schumpeter's description of entrepreneurship and entrepreneurial functions. The person who typically performs this function in developing countries today may be either a manager or one who adapts the experience of others in production methods, sources of supply, and markets to conditions prevailing in newly developing countries. In the subsequent discussion, we will be concerned primarily with individuals who are active as business leaders in the private sector. The facts of economic development in Asia and Africa seem to indicate that an important role in this process may be played by private entrepreneurs in small and medium-scale plants, provided a private enterprise sector is at all in existence. In addition, there must be within the framework of government plans for economic development some intention to develop "mixed economies" in which business and private enterprise combine for the improvement of the economic welfare.

5. In short, we are concerned with private entrepreneurs who are active in the small and medium-size industrial, commercial, and financial enterprises which are appearing or will appear in the economically less developed nations. Many of the entrepreneurial characteristics will also apply to persons in positions of business leadership in the public sector. In some cases the differences that result from the different responses of the private and public business leaders will be pointed up.

6. It may be useful to cite a few figures indicating the general significance of small and medium-scale private entrepreneurs in the process of industrialization and general economic growth in developing countries. If we classify industrial establishments in terms of the number of workers employed and assign enterprises employing fewer than 50 persons to the class of small and medium-scale plants, we find the following data from the economic experiences of some Western European countries: in Austria, in 1930, 57.7 percent of the total labor force in secondary production (manufacturing, mining, and construction) worked in firms employing fewer than 50 workers. The corresponding figures for other countries were as follows: in France, in 1906, the percentage was 70.6; in Germany, in 1907, it was 54.5; in Switzerland, in 1955, it was 43.7; and in Norway, in 1953, it was 51.3. From these figures it becomes apparent that small and medium-sized plants have played an important part in industrial countries, and that even long after the onset of the industrialization process the majority of workers in secondary production were employed in these "small" firms. The corresponding proportions for commercial activities, especially retail trade, and for financial activities, except investment banking and modern types of insurance,are probably much higher than those in secondary industries. In brief, the small and medium-scale firm can be said to have played an important part in the more highly developed countries and may be expected to play an important part in the process of economic growth in the developing countries.

7. But there are still other reasons emphasizing these enterprises in developing countries, especially those with dense populations and large labor supply. It is quite customary, when we think of industrial development in the new nations, to evoke the picture of a large scale industrial plant; e.g., in steel or cement production. But the existing markets, demand patterns, and conditions of comparative advantage in developing countries are such as to make the establishment of small plants, mainly producing light consumers' goods, most attrative. Hence, industrialization must be thought of in the next two or three decades not in terms of new Pittsburghs or Birminghams in the developing nations of Asia and Africa, but rather as a process in which small capital is allocated in various industrial and commercial fields. Although these units may increase in size, they will remain--from a world point of view--fairly small, or at best medium-sized, in their fields of economic activity. The reason for this stems from the very different relative supply of labor and capital, and particularly from the fact that capital

to be invested on a long-term basis is in very short supply and often unavailable through the ordinary channels. In other words, banks will ration credit to small entrepreneurs who wish to grow rapidly. Many enterprises may have to begin with meager capital funds and grow only to the extent to which they can reinvest their profits. In the industrial field the certainty that small and medium-scale enterprises in the developing countries will persist must be taken into account. In the light of Western Europe's historical experience entrepreneurs on the small and medium scale will have important roles for several decades.

8. Up to this point no distinction has been drawn between the different areas of economic activity in which entrepreneurship is exercised. Moreover, in the literature of entrepreneurship little or no distinction has been made usually among the fields of entrepreneurship. Yet, a superficial study of business leaders in many developing countries shows that industrial entrepreneurship falls far short of the degree to which commercial and financial entrepreneurship flourishes. Why do we find in so many developing countries no dearth of moneylenders and traders but so few indigenous industrialists? For example, in almost all the new Nations of West Africa, there are extended networks of trade in which Africans, persons of Middle Eastern origin, and other Mediterranean people participate. Yet few of these persons engage in industrial pursuits. A similar situation is noticeable in several East African countries and in various parts of Southeastern Asia. Various arguments have been raised to explain this phenomenon. Foremost is the fact that local industrialists, especially in former colonial areas, were unable to compete with the powerful enterprises set up by Europeans. A similar argument may be made for those developing countries which were politically independent but whose potential entrepreneurs faced the overwhelming competition of foreign investors. Most European foreign investments were concentrated in such basic industries as mining, transport, and power, and only small proportions of private foreign capital flowed into manufacturing. A look at the kind of enterprises which entrepreneurs established in trading and moneylending fields shows that they were often supplementary to the similar activities of European firms. The small indigenous traders and moneylenders had to find their places in the unoccupied interstices of the economic system. They mediated between the urban centers and the countryside; they provisioned small retailers; they serviced the financial needs of rural and semi-rural populations unable to offer bankable securities; and they distributed commodities on a scale that would have been uneconomical for the large foreign enterprises.

9. Why do we not witness similar developments in the industrial field? Clearly we should not expect that the small indigenous entrepreneurs would have competed with the large foreign mining or transport companies. There were and are, however, numerous industrial branches in which ample opportunities exist for the establishment of small and medium scale plants providing for the role of trader and moneylender with regard to the foreign import houses, wholesalers and bankers. This difference in behavior in different economic fields by indigenous entrepreneurs stems from the fact that economic development everywhere is tied, to a substantial degree, to the growth of industry. In mixed economies industrial growth is confined to a few large establishments, mainly in the field of heavy industry. However, highly significant is the rapid growth of many small and medium-scale firms producing consumer goods and offering services. Hence, the gaining of a clearer insight into the different conditions under which industrial, as against commercial and financial, entrepreneurship may flourish in a developing country may be an important guide for over-all economic policies.

10. A reason advanced for the sluggishness of industrial entrepreneurship in developing countries turns on the talents required to guide an industrial enterprise. These talents differ from those needed for most successful commercial or financial dealings. A small trader or moneylender can operate successfully with only a few, and often without any, permanently employed assistants, but the

industrial entrepreneur--provided he is more than a craftsman or artisan--usually must hire men or women whose work he must organize and guide. In short, we may presume that an industrial entrepreneur must have a broader range of abilities than a moneylender or trader. He must be a person who can lead others in a common enterprise and he must have technical knowledge in his branch of production.

11. Another distinction between industrial entrepreneurs and financial or commercial entrepreneurs is found in the commitment of assets in the production process. A trader may carry on his operation without ever attaining property rights to the object he deals with; if he is a broker or commercial agent, he may merely lose his earnings from a transaction but not the capital invested in it. In addition, the capital that a trader, or moneylender, does invest has a faster turnover normally than that invested in an industrial establishment. Moreover, a moneylender or banker deals in a commodity that has the widest currency, that is accepted by everyone, and that can be easily transported, hidden, or converted into other assets. On the other hand, an industrial entrepreneur usually has a much larger proportion of his assets tied up in fixed capital. He often depends on an imperfect market for the sale of his output; his profit is exposed to dangers which moneylenders or traders sometimes escape. Other things being equal, the risk of transforming a given amount of capital into industrial assets is much greater than in trading or financial operations. A commitment of one's property to investment in industry normally implies a longer-term commitment, and this increases the uncertainty. There is less flexibility in an operation once capital has taken the form of fixed assets, and the prospective profitability of an enterprise is more directly influenced by changes in taste and fluctuations in demand than is true for capital invested in commerce or finance.

12. Thus, entrepreneurship depends partly upon the appearance of persons with a psychological make-up for entrepreneurial activity, and partly on the social and economic environment that would make it an attractive venture to such individuals. Since many developing nations wish to create a climate favorable for the rapid development of entrepreneurship, especially industrial entrepreneurship, a detailed discussion of the ways in which these personal and environmental conditions can be enhanced may be helpful. The significance of the psychological dispositions for entrepreneurial activity is quite clear from the preceding discussion. Some writers have made these personality factors the fully determining conditions of economic innovations and economic growth, but this appears perhaps too extreme a position. There is little doubt that features in the environment can be manipulated with much more predictable outcomes than can the shaping of personality development. In brief, we may consider that certain conditions in the economy will make possible the successful exercise of entrepreneurial functions regardless of the relative abundance or scarcity of certain personality types.

13. These conditions of the economy may be classified as consisting, on the one hand, of certain forms of social and economic overhead capital, and, on the other, of certain governmental services which are placed at the disposal of entrepreneurs. One such condition is the maintenance of law and order. Involved here are the distribution of status and political power, the manner in which power affects entrepreneurial functions and the business community's part in the making of political decisions. A system of private enterprise can exist only if the following basic conditions in the legal-political field are met:

(a) Governmental action short of complete non-intervention but so designed that it does not deny to private persons, explicitly or implicitly, any kind of autonomy in decision-making in the economic field.

(b) A minimum provision of legal, and legally enforceable, institutional rules according to which private economic decisions can be made and implemented.

(c) Protection of the assets owned by an enterprise against expropriation by others, and protection of the contractual relationships entered into by business leaders with one another or with outsiders.

14. These conditions in some historical situations have been forced upon governments by the political action of business leaders and their political allies. The Industrial Revolution, whether it arose gradually through a process of legal and political reform, as in Britain, or was strongly supported by a political revolution, as in France in 1789, generally altered the prevailing legal and political system--a lessening of arbitrary privileges in the economic area for the aristocracy, no more special treatment of certain privileged groups, wider access to the elite from the ranks of the business community, and a forum (Parliament or some less visible arena) in which pressures by business leaders for legislation in support of their most important needs could be exercised. In other countries the processes by which this greater participation and protection of the entrepreneurial community were achieved differed. In Germany a political alliance was concluded between the aristocratic junkers and the interests of industrial enterprise. In many of the ex-colonial countries the development of entrepreneurship--the pattern which Max Weber called "pariah entrepreneurship" was based largely on a European system of legal security and predictability imposed upon these countries. In Japan, finally, this system was attained with a minimum modification of the social structure, primarily because the elite were persuaded to realization of the nation's needs and to the wisdom of adopting Western technology and economic organization.

15. The crucial lesson of these instances teaches that private entrepreneurship will develop only if the legal order provides the necessary accommodation for the needs and protection of entrepreneurial activity. Accommodation must include not merely the promulgation of a "neutral" system of laws, but also the shaping of institutions through which entrepreneurs can exert pressure on actions of the state and especially upon legislation. In the change, entrepreneurial performance may rise to a level where it can provide not wealth alone but also social status and some form of political influence. But if those favorable conditions are not created, other outcomes are possible. One is socialization of all enterprise, the government assuming all decisions in the economic realm, the establishment, in short, of a fully planned economy after abolition of private enterprise. A second possibility is the establishment of a system of statism, such as existed in Turkey in the inter-War period, in which private enterprise nominally exists but actually functions under the full direction of the Government. A third is the neglect of enterprise altogether and subsequent stagnation of the economy. Thus, the creation of a "climate of entrepreneurship" has not only economic and social dimensions, but also a political one.

16. In the establishment of a social structure conducive to the development of entrepreneurship, the feature of economic overhead capital must not be overlooked, since provision of this capital influences the development of entrepreneurship in a positive direction. Most important is provision of power for industry and of transport facilities. These two are perhaps the most significant items in the vast variety of economic overhead capital whose presence in abundance encourages the growth of industrial and commercial enterprise. It is not necessary to enlarge on the importance of power; without it modern productive processes are impossible. Nor is it necessary to expand on transport facilities, since their lack has severely limited markets and prevented establishment of some industries. But it is paramount to state that the less developed a region is, the greater the need for a good transport network.

17. In this discussion of socio-economic environment we have moved from the most difficult features to the less difficult. The most significant and most difficult is the creation of an appropriate psychological and political structure for

entrepreneurial effort. Slightly less important and easier to provide, given the necessary financial resources, are facilities for power and transport. Easier still is the establishment of various government agencies to offer, either without charge or at low cost, services of importance to an entrepreneurial community. Among these services are information on markets, sources of supply, technical innovation, internal organization of plants, innovations in design, and other technical matters which the small and medium-scale entrepreneur in a developing country finds difficult to obtain on his own. Markets in most developing countries are too small and too confined to make the publication of technical and marketing journals attractive. Thus, business leaders must and often do rely upon government for this information.

18. In addition to the technical information of use to entrepreneurs, the government may offer other services at low cost or as a subsidy. These services may include assistance with accounting, long-term credit, and the provision of various types of technical education. The need for such services has been widely recognized and, in several developing countries, appropriate institutions have been created to supply them. The agencies charged with providing the services bear different names, but have been designated collectively as development banks or development corporations. Common to all these development corporations is the function of providing credit to entrepreneurs, particularly for long-term needs. In addition to the credit-financing function, the development corporations should provide technical and economic information useful to new entreprises in the earliest stages of their activity.

19. The development bank should have facilities to find out where the most suitable machinery can be purchased; to supply information on industrialists' markets, freight charges, insurance costs, and other expenses incurred in establishing new business. It will have better information than most traders. Its staff, after examination of production processes, can develop a system of accounting which will be relatively simple and accurate and will meet the needs of the entrepreneur at each stage of his operation. It may even establish a department to acquire machinery to sell to new firms on a hire-purchase plan. Finally, it may cooperate with new firms to find suitable locations and design work procedures and related patterns of practical operations which make for sound production and at the same time reduce the costs of productive operations.

20. In many developing countries in which industrial development banks have been established, financing activities are largely confined to larger-scale enterprises. This is understandable. The technical assistance these firms need is proportionately less than that needed by smaller firms. In most larger establishments the chief assistance needed by entrepreneurs is long-term credit. In smaller firms the chief requirement is advisory services of various kinds, in addition to credit. Also, the manpower training required, although it may be more extensive than training of managers of large private or public corporations, is oriented toward the economic, organizational and technological processes on which their enterprises are likely to concentrate. This suggests that the development of commercial, financial, and especially industrial entrepreneurship on a wider basis requires not only different approaches by banks and government information services but also by educational services.

21. Successful entrepreneurship, this paper has argued, implies the exercise of leadership, maturity of character, a sense of security and knowledge of, or familiarity with, the skills related to the entrepreneur's undertakings. The entrepreneur is a man with the broad view, as distinguished from the technical or economic specialist, but familiarity with technical aspects of production is helpful where it is not imperative. Here he differs from the expert of a large enterprise who is employed for his specialized or technical knowledge of production, purchasing, labor relations or other limited and well-defined spheres of action.

The entrepreneur in a small or medium-size plant must be more than a man with some knowledge of the production techniques employed in the plant; he must be also a a person who makes the chief decision relating to sales, supplies, production processes, relations with workers and numerous elements of business. Primarily he must display characteristics of personality and leadership, the willingness to take some risks and the desire to perform his role successfully.

22. Because of the basic personality characteristics essential to leadership, the training of the entrepreneur is of major significance. This is especially true in industry--as has already been pointed out--where the entrepreneur must be informed on matters relating to the technical processes. Education and on-the-job training in a growing establishment are prime sources for the acquisition of this information. For example, an entrepreneur who wishes to start a foundry outside his own country should be able to obtain access to an enterprise at home, if foundries are already in operation there. Otherwise, he should visit nearby developing countries which have foundries.

23. Up to this point we have been concerned with the analysis of external factors which may influence the growth and encouragement of entrepreneurship in developing countries. In the last resort, the appearance of entrepreneurs is a matter of changing human effort and human action. However, we must also consider certain aspects of recruiting and promoting a corps of entrepreneurs in developing countries. In dealing with this problem we are in one of the most disputed and uncertain areas of social research relating to developing countries. Opinions concerning the human factor in entrepreneurship range all the way from sheer resignation from the impossible task of dealing with this factor meaningfully, to the other extreme of prescribing elaborate schooling and training programs.

24. The psychological aspects of entrepreneurship have been treated principally by E. E. Hagen and D. C. McClelland, each stressing somewhat different characteristics. In brief, the generally accepted viewpoint on the psychological dimension in entrepreneurial action may be summarized as follows: The industrial entrepreneur, and in fact, the innovating entrepreneur in general, is a distinct personality type. He must be persuaded that change can occur and that it can be brought about by individual action. He also must be motivated to bring about this change by his own activity. This is why--as we have maintained earlier--the general standards of a society must allow persons with newly acquired wealth some access to power or prestige. If overwhelming social obstacles shut these rewards off from entrepreneurial action, persons with the appropriate personality disposition will fail to function successfully, will seek other careers or quit the country.

25. This sketch of the psychological conditions of entrepreneurship has followed largely in the footsteps of Schumpeter and those influenced by his views on the role of innovating entrepreneurs in economic development. The argument raised by Hagen and McCelland turns on the view that economic growth will occur only if individuals with characteristic entrepreneurial personalities appear in sufficient number; that is, if the appropriate motivations affect not merely a few persons, but penetrate deeply into all layers of society. According to this theory, the appearance of entrepreneurship on a mass basis can be explained as the result of two factors. First, it flows from a special historical situation in which new paths to higher social status are sought through economic achievement. Second, it is the result of the appearance in a society, with more than ordinary frequency, of persons with special personality traits; i.e., persons with unusually high achievement motivation.

26. McClelland and his students have shown that such persons existed at various periods in history when societies did undergo rapid economic development, and that not only these persons but the whole value system of the societies adopted a more

intensive preoccupation with achievement. This group of scholars also has shown that the drive of these persons is a result of their family rearing. But the very fact that a substantial number of entrepreneurs appeared in societies in which a short time ago little or no such talent seemed to be available, makes one suspect that individuals with the required ambitious drive exist in all human societies, though they may not always make their impact felt with the same intensity. If economic development and industrialization are planned as goals of a society as a whole, would-be entrepreneurs will step into a very different environment from that which prevailed in the historical epochs which McClelland and his students, Hagen, and even Schumpeter have investigated.

27. In the developing countries we meet nations which have written the slogan of economic growth on their banners and are prepared to provide the most extensive accommodation to persons who wish and who can step into positions of entrepreneurship. Moreover, from the great number of traders scattered about the urban and rural areas of almost all developing countries, we may deduce that individuals who exhibit achievement-oriented personalities are available in developing societies. What is required is not so much the creation of new personality types, but rather the opening up of opportunities in the social, economic, and political environment, in the scale and impact of government services, and in the intellectual equipment and training of the persons concerned.

28. The application of rational principles of planning to the fostering of economic growth will usually be reflected in a mixed-economy; i.e., one in which both government and private enterprise undertake parallel and combined efforts for the over-all economic growth of the nation. This pattern of cooperation and division of functions is appropriate to developing countries, because an underdeveloped economy cannot afford to be doctrinaire. It faces serious shortages of all kinds and it must, in order to experience economic growth, confront the serious business of getting things done--getting capital accumulated and invested in the most useful directions for economic growth. Given widespread backwardness among large masses of the population and urgent desire for economic development, the leadership of the government is essential to an economy which otherwise might remain almost completely stationary. This cooperation between public and private interests may have two results: on the one hand, all available means must be employed to encourage and enhance the rate and amount of savings in the economy and, on the other, the most efficient channels must be used to allocate these savings among those branches of production in which the over-all net return to the economy will be greatest. It is within this context that a centrally prepared plan has manifold uses, and if such a plan is well conceived and based upon the existing moral and political rules of the society, it may have a crucial influence in the growth of the economy. But if the general moral and political rules of a nation recognize the right and, in fact, the necessity of private enterprise, the plan will be successful only if it makes due allowance for the exercise of private initiative in all or a large number of fields of economic action.

29. That it is possible to combine an over-all economic development program with the simultaneous encouragement of private enterprise and the fostering of an entrepreneurial class is abundantly demonstrated in the many cases on record in both developed and less developed nations. This does not mean that frictions will not arise between the business community and the planners. There will be conflicts over the merits of short-term gains as against maximum long-term growth rates; the division of decision-making functions between public and private agencies; the precise limits of what industrial functions should be reserved to the government. Though--as was pointed out earlier--the business leaders will want and must get some access to the realm of political decision-making, they must learn, on their part, that a governmental development plan is not an instrument which robs them of all freedom of action. It merely designates, from the point of view of over-all economic considerations embracing the society as a whole, the paths of progress and the primary

patterns of investments which are considered most conducive to progress in the economic performance of a society. This will imply regulations and even restrictions on the free exercise of entrepreneurship but may nevertheless conform to the long-run interest of many entrepreneurs, since in many developing countries the differences between social costs and benefits, on the one hand, and private costs and benefits, on the other, are often substantial.

30. These remarks are intended to reconfirm the fact that entrepreneurship can play a vital role in a planned economy of a developing country, provided the development plan is drawn up in such a way as to provide room for the operations of private entrepreneurs, and provided these entrepreneurs are not dismayed or frightened from making independent decisions even though many decisions relating to production and investment are reserved for, or regulated by, government. It is quite conceivable that the mixed economy as it takes shape in many developing countries, may grow gradually into a new form of "economic system" with its own distinctive characteristics, one of which would be collaboration between public officials and private entrepreneurs in the development of the economy. The ultimate outcome most highly prized by both public officials and business leaders in a developing nation is economic development. Growth and improvement in the performance of the public sector stimulate demand for the output of private entrepreneurs. Also increase in output and improvement in the quality of goods and services supplied by private firms adds to the standard of living and the material welfare of the population at large. Hence, from a secular viewpoint the interests of government, of the newly emerging entrepreneurial class, and of the mass of the population in a developing nation are closely parallel. The main problem is to find a formula by means of which this parallelism of interests can be put into effect with least friction and greatest likelihood of success.

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КОНФЕРЕНЦИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ
ПО ВОПРОСУ О ПРИМЕНЕНИИ НАУЧНЫХ И ТЕХНИЧЕСКИХ ЗНАНИЙ
ДЛЯ УДОВЛЕТВОРЕНИЯ ПОТРЕБНОСТЕЙ МЕНЕЕ РАЗВИТЫХ РАЙОНОВ

ПУНКТ ПОВЕСТКИ ДНЯ: B.1

УКРАИНСКАЯ ССР

ЭКОНОМИЧЕСКИЕ ПРОБЛЕМЫ В РАЗВИВАЮЩИХСЯ СТРАНАХ И НАРОДОНАСЕЛЕНИЕ

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Документы, составленные для Конференции Организации Объединенных Наций по вопросу о применении научных и технических знаний для удовлетворения потребностей менее развитых районов, служат в качестве рабочих документов для этой Конференции. Они опубликованы в том виде, в каком были представлены их составителями, и их содержимое и выраженные в них мнения принадлежат их составителям (см. примечания на оборотной стороне).

ПРИМЕЧАНИЯ

1. Документы, включенные в число материалов, принятых для обсуждения на общих сессиях, будут в распоряжении делегатов Конференции на следующих официальных языках Организации Объединенных Наций: русском, английском, испанском и французском.

2. Документы, включенные в число материалов, принятых для обсуждения на специализированных сессиях, будут в распоряжении делегатов Конференции только на одном из этих официальных языков.

3. Резюме всех документов в том виде, в каком они были представлены их составителями, будут в распоряжении делегатов Конференции на следующих официальных языках Организации Объединенных Наций: русском, английском, испанском и французском.

4. До открытия Конференции документы и резюме не будут выпущены для общего распространения. Они будут опубликованы заблаговременно только в ограниченном числе экземпляров и исключительно для правительственных делегаций и других правомочных участников. Последующие опубликование и рассылка трудов Конференции будут обеспечены в соответствии с практикой Организации Объединенных Наций, как это установлено ее Издательским комитетом.

ЭКОНОМИЧЕСКИЕ ПРОБЛЕМЫ В РАЗВИВАЮЩИХСЯ СТРАНАХ И НАРОДОНАСЕЛЕНИЕ

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Глубокие социальные и экономические процессы, происходящие на значительных пространствах Азии, Африки, Центральной и Южной Америки, не могут не привлекать серьезного внимания социологов и экономистов к проблемам развивающихся стран. Причем причины медленного экономического развития во многих странах некоторые социологи и экономисты непосредственно связывают с плотностью, количеством и темпами роста населения. Однако мы не знаем в истории примера, когда плотностью, количеством и темпами роста населения оказывали бы решающее влияние на экономическое и социальное развитие какой бы то ни было из стран мира.

По оценке экономистов, за последние 300 лет в Америке население увеличилось в 30 раз, в Австралии и Океании - в 8 раз (в названных районах естественно исключительно большую роль сыграла эмиграция), в Европе и Азии оно возросло в 4-5 раз, а в Африке примерно в 2,5 раза.

Автором настоящего доклада был произведен анализ естественного прироста населения стран и территорий мира за последние 110 лет - с 1850 по 1960 год. Ни в одной стране, независимо от континента, размеров территории и плотности населения не обнаружено удвоения населения в силу естественного прироста за каждые 25 лет, что, как известно, пророчествовал Мальтус. Более того, выяснилось, что в Инди, например, которую обычно называют в числе стран с бурно растущим населением, ежегодный прирост населения на последнюю дату переписи по сравнению с исходной меньше, а в отдельные периоды значительно меньше, чем в Великобритании.

В XX столетии темпы роста населения всего мира значительно возросли. Этот факт общеизвестный. За последнее время ежемесячно оно возрастает на 5 млн.человек. По данным ООН, на 1 июня 1962 г. население Земли составило 3 млрд.120 млн.человек. Наблюдаются существенные изменения в темпах прироста населения по районам земного шара. Наиболее быстрыми темпами население растет в большей части стран Азии и Африки, а также в некоторых странах Центральной и Южной Америки. Для этих стран коэффициент рождаемости составляет 40-50, коэффициент смертности 25-30 на

на 1000 человек[1]. Общий прирост населения равен 1,5-2% в год.

Картина прироста населения по районам будет существенно изменяться и в будущем. К 1961 году в экономически слаборазвитых странах проживало около 1 млрд.234 млн.человек, что составляло 40,9% всего населения земного шара.[2] Согласно данным ООН население Азии (исключая Азиатскую часть СССР) может возрасти к 1975 году до 2 млрд.человек, а к 2000 году - до 3,9 млрд.человек.[3] Авторы доклада, представленного недавно Экономической комиссией ООН для Азии и Дальнего Востока придерживаются того мнения, что если существующая в настоящее время тенденция к увеличению роста населения будет иметь место и в будущем население этой части земного шара в ближайшие 30 лет возрастет почти вдвое.

У.Томпсон, Ф.Нотейнтейн, К.Дэвси, В.Пенделя, Д.Шевалье, Г. Бельшоу, Дж.Винер, Г.Браун и ряд американских, английских, французских и других западноевропейских социалогов, экономистов и демографов проявляют интерес к проблемам развивающихся стран, к глубоким социальным и экономическим процессам стран Азии, Африки и Латинской Америки. В частности, Ф.Нотештейн убежден, что "с точки зрения длительной перспективы высокая рождаемость несовместима с низкой смертностью"[4]. Так или иначе с этой точки зрения солидаризируются многие другие западные демографы.

Названные выше экономисты склонны считать, что самостоятельное экономическое развитие молых независимых государств не способно обеспечить улучшение материального положения народных масс. Существование в этих странах некоего "порочного круга" не позволит мол решить проблемы голода. Попытки развивать национальную экономику, осуществлять индустриализацию, считают сторонники этой теории не изменят положение. Более того, стремление к индустриализации еще дальше углубит противоречия в этих странах, поскольку внедрение современной техники, мол, ускорит и без того бурный рост незанятого населения. Что касается положения народов этих стран, то с индустриализацией, считают они, оно еще больше ухудшится, ибо индустриализация отвлечет ресурсы от сельского хозяйства, что в условиях быстрого роста населения приведет к усилению голода. Многие сторонники этой новой теории народонаселения считают, что индустриализация экономически менее развитых стран вообще не возможна. Иными словами, немалое число социологов и экономистов в США, Англии и Франции и ряде других западноевропейских стран склонны солидаризироваться с мнением, что увеличение численности населения нависает над всеми бедными странами, как грозовая туча, что оно способно не только свести на нет тот вклад в дело экономического процветания, который возможно обеспечить за счет всех других факторов[5], но даже ухудшить положение по сравнению с исходным.

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1) "Доклад о мировом социальном положении", ч.I, ООН, 1957, стр. 75-76.

2) Журнал "Мировая экономика и международные отношения", № 2, 1962, стр.129.

3) "Курьер-Юнеско", № 7-8, 1962, стр.37.

4) Fr. Notestein, Summary of the Demographic Background of Problems of Under-Developed Areas, The Milbank Memorial Fund Quarterly, 1948, p. 20.

5) B. Viner, International Trade and Economic Development. Clarendon Press, Oxford, 1953.

Главное и определяющее все остальное - это, по мнению вышеуказанных социологов и экономистов, для экономически менее развитых стран - ограничение рождаемости. Борьба за сокращение рождаемости, считают они, должна занять важнейшее место в государственной политике.

Однако перед менее развитыми в экономическом отношении странами стоят исключительно сложные проблемы. Необходимо создать собственную, экономически эффективную производственную базу, нужно обеспечить быстрый рост производства, покончить с голодом и нищетой широких народных масс, надо обеспечить работой десятки миллионов людей, надо начать наступление на неграмотность и невежество.

Поэтому можно ли считать, как думают сторонники новой теории народонаселения, что из числа социальных проблем, стоящих перед большинством слаборазвитых стран, наиболее серьезная проблема связана с политикой в области народонаселения?

Каковы же пути решения этих многочисленных и жизненно важных для народов менее развитых районов мира вопросов?

Самым важным условием интенсивного накопления средств для подъема национальной экономики, роста национального дохода, преодоления голода и нищеты в развивающихся странах является, не сокращение рождаемости, а обеспечение наибыстрейших темпов экономического развития, полное и наиболее рациональное использование больших трудовых и материальных ресурсов, которыми располагают эти страны.

Мировые энергетические и минерально-сырьевые ресурсы практически оказываются неисперпаемыми, ибо прогресс науки и техники открывает все новые и новые источники энергии, новые виды сырья, с заранее заданными средствами, которые с помощью современных химических методов создаются самим человеком. Что касается земли, пригодной для обработки человеком, то по мнению ряда западноевропейских ученых сельскохозяйственная площадь во всем мире достигает 3 млрд.600 млн.га. По расчетам А.Якобсона, сообщенного на конференции экономистов-аграрников в Хельсинки (1955 г.) достижение урожая повсюду в мире, равного урожаю, собираемого в Дании или других странах северозападной Европы позволило бы с названной выше площади получить пищевых продуктов в количестве, достаточном для 32 млрд.400 млн.человек, что более чем в 10 раз превышает население земного шара.1) Однако площадь пригодной для сельскохозяйственного использования практически оказывается значительно больше. По данным советского ученого академика Л.И. Прасолова, за исключением земель в Арктике и Антарктиде, а также земель, совершенно непригодных для сельскохозяйственного использования, свыше 2/3 поверхности всей суши или около 10,5 млрд. га вполне пригодны для ведения сельского хозяйства. Между тем, сейчас под земледелие используется на более 1 млрд.га.2) Таким образом, возможности расширения площади под сельскохозяйственные культуры остаются практически неисчерпаемыми.

1) Factor Affecting the Development and Stabilisation of Agricultural Prices with their Bearing on Nutrition Policy by A.P. Jacobsen - The Conference of the Economy of Agriculture, Helsinki, 1955.

2/См. Л. И. Прасолов "Почвы СССР", том I М. Л. 1939, стр. 47.

Сказанное позволяет считать, что энергетические, минерально-сырьевые ресурсы и земельные ресурсы, пригодные для обработки, а также количество и темпы роста населения не являются лимитирующим фактором в решении главной дилеммы развивающихся стран - в подъеме их экономики.

Глубокая отсталость сельского хозяйства в менее развитых районах мира внушает серьезную озабоченность правительствам и демократическим организациям стран, обретшим государственную независимость. Борьба с пережитками феодальных и полуфеодальных отношений, которые сохранялись до последнего времени колониальными властями, является предметом особой заботы правительств многих развивающихся стран Азии, Латинской Америки и Африки. Более 80% населения экономически менее развитых стран, стран, аграрных по своей экономической структуре, занято в сельском хозяйстве, причем для большинства из них оно является единственным источником существования. Эти люди постоянно живут под угрозой недоедания, а то и голода. Не случайно поэтому правительства стран вставших на путь самостоятельного политического и экономического развития в первую очередь провозглашают насущную необходимость серьезных преобразований в области аграрных отношений. Именно от развития сельского хозяйства в значительной мере зависит в этих странах весь ход экономического развития, возможность увеличения национального дохода, внутренних накоплений и повышение жизненного уровня населения. (В сельском хозяйстве развивающихся стран до сих пор создается значительно более половины валового национального продукта).

В настоящее время в этих странах возникли более благоприятные условия для подъема сельскохозяйственного производства. В отдельных странах были осуществлены некоторые прогрессивные преобразования в области аграрных отношений. Вместе с тем положение в сельском хозяйстве абсолютного большинства развивающихся стран продолжает оставаться крайне тяжелым. Причин на этот счет много. В первую очередь отсутствие национальной промышленности, способной снабдить свое сельское хозяйство необходимой техникой, а также химическими удобрениями, без чего трудно представить современное интенсивное земледелие.

В 1961 г. количество тракторов, используемых в сельском хозяйстве всех стран Азии за исключением Японии, равнялось тракторному парку Швеции, было в 7 раз меньше, чем в ФРГ и в 50 раз меньше, чем в Северной Америке. К тому же, за последнее время произошло заметное замедление темпов механизации сельского хозяйства этих стран. Объясняется это тем, что ныне цены на большинство сельскохозяйственных товаров на мировом капиталистическом рынке находились (за исключением зерновых) на самом низком уровне за последнее десятилетие. Экспорт же продовольственных и сырьевых товаров является для менее развитых стран мира главным источником финансирования импорта, в том числе импорта сельскохозяйственных машин и оборудования.

Исключительно плохо обстоит дело в этих странах и с химическими удобрениями. По оценке ФАО их потребление в странах Юго-Восточной Азии в 1961 г. составляло в среднем 1,4 кг. на 1 га обрабатываемой земли, тогда как в США - 30,3 кг., в Англии - 148,5 кг., в Японии - 269 кг.

Существующий уровень науки и техники безусловно позволяет увеличить производство продуктов питания и других сельскохозяйственных продуктов в менее развитых странах мира. Наряду с использованием современной сельскохозяйственной техники необходимо ши-

рокое внедрение достижений агрономической, а также зоотехнической наук. Для этого естественно требуется массовая подготовка национальных кадров.

Подъем сельского хозяйства, связанный с механизацией производства, использованием естественных и химических удобрений, с совершенствованием системы орошения, со сбором, там где это возможно 2 и более урожаев в год, разрешение продовольственной проблемы в развивающихся странах можно рассматривать только в связи с общими планами развития страны. Только в этом случае можно рассчитывать на успех.

В основе подъема экономики безусловно должны стоять отрасли производства, обеспечивающие народное хозяйство страны, в частности электростанции, предприятия металлургической и машиностроительной промышленности. Только следуя по пути индустриализации, менее развитые страны могут обеспечить необходимые предпосылки для подъема сельского хозяйства, а следовательно и решение продовольственной проблемы. Индустриализация, в свою очередь, способствует значительному росту занятости и известному рассасыванию скрытого перенаселения.

Ярким примером может служить история Советского Союза, где национальный доход на душу населения, несмотря на большой прирост населения, увеличивается намного быстрее, чем в наиболее развитых капиталистических странах. До революции Россия считалась страной кувалды и тачки, сохи и прялки. Ныне СССР страна передовой техники, сверхмощных станков и сверхточных приборов, автоматических линий, электронносчетных машин и космических кораблей. В 1961 г. машиностроительная и металлообрабатывающая промышленность Советского Союза выпустила продукцию в 1000 раз больше, чем в 1919 г. В том же году было выработано электроэнергии в 650 раз больше, чем в 1919 году. Советские люди давно забыли, что такое безработица, нищета и голод; страна превратилась в страну сплошной грамотности и высокой культуры. Превращение России в мощную экономически развитую державу с крупным механизированным и кооперированным сельскохозяйственным производством явилось результатом индустриализации, которая привела к образованию многих новых отраслей и позволившая преобразовать всю структуру и производственную базу народного хозяйства.

В процессе индустриализации в СССР резко возросло городское население и несколько снизились темпы естественного прироста населения в стране в целом. Наряду с этим быстро росло производство продовольственных продуктов земледелия и животноводства, увеличивался рыбный промысел. К концу 50-х годов в СССР товарная продукция зерна в расчете на душу населения по сравнению с 1913 г. (наиболее урожайным в дореволюционной России) увеличилась почти в 2,4 раза; товарная продукция мяса в 2 раза. Производство хлопка-сырца, подсолнечника и овощей возросло примерно в 4,8 раз, а товарная продукция сахарной свеклы и картофеля, молока и шерсти - в 2,4 раза.

Ныне молодые независимые государства, ставшие на путь самостоятельного политического и экономического развития, значительно легче, чем это было Советскому Союзу преодолевать вековую отсталость. Они могут не только использовать опыт других стран, но и рассчитывать и на более действенную помощь извне.

Вопреки заявлениям будто слаборазвитым странам нужен только один вид помощи - помощь по ограничению рождаемости 1), для

1) L. Dice, Ecology and Over-population. The scientific Monthly, Lancaster, April, 1957, v. 84, p. 66.

развивающихся стран большое значение имеет помощь в развитии их экономики, подъеме культурного уровня жизни населения, а также здравоохранении, передача опыта в деле развития сельского хозяйства, промышленности, транспорта и связи.

Учитывая стремление многих национальных государств Азии и Африки в развитии своей экономики, СССР и другие социалистические страны оказывают им помощь, в первую очередь, при сооружении предприятий металлургической промышленности, машиностроения, энергетики, а также традиционных отраслей народного хозяйства. Наши страны помогают и в подготовке высококвалифицированных кадров для промышленности и сельского хозяйства.

Что же касается мероприятий по регулированию размеров семьи, по ограничению рождаемости и уменьшению темпов роста населения, то явно каждое правительство должно само определить свой курс экономического и социального развития, само рекомендовать программу решения проблем народонаселения. Это целиком и полностью относится в частности и к мерам, которые могут быть предприняты для изменения в движении показателей рождаемости.

В Советском Союзе, где государство берет на себя большую долю расходов и забот по охране материнства и младенчества, вместе с тем разрешены аборты, в специальных консультациях женщины имеют возможность воспользоваться советом врача о предупреждении беременности. В ряде научно-исследовательских институтов и лабораторий страны ведутся широкие исследования с целью создать новые безвредные и удобные противозачаточные средства. Тем самым создаются предпосылки для сознательного материнства, для развития счастливых семей, в которых все дети являются желанными. Одновременно ведется серьезная борьба против антинаучных средств ограничения рождаемости и нелегальных абортов, уносящих жизни многих женщин.

В то же время Советское государство заинтересовано в увеличении численности населения страны, ибо оно исходит из того, что человек является главной производительной силой, что при рациональном использовании трудовых ресурсов численность населения представляет собой один из важнейших факторов, обуславливающих рост накопления общественного богатства. Вся политика государства, направленная на максимальное удовлетворение потребностей населения создает благоприятные условия для роста народонаселения страны.

В странах, где основной сферой приложения труда является сельское хозяйство, большое и плотное население создает дополнительные трудности, но оно не лишает возможности эти страны создавать свою национальную экономику и разрешить продовольственную проблему. Более того, при рациональном использовании трудовых ресурсов они становятся одним из важнейших факторов роста общественного производства и накопления общественного богатства. Трудящийся человек - основная производительная сила общества.

В социалистическом обществе в основе народнохозяйственных планов лежит объективное стремление наиболее полно удовлетворить растущие потребности увеличивающегося населения.

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